SOME ACARINA FROM AUSTRALIA AND NEW GUINEA PARAPHAGIC UPON MILLIPEDES AND COCKROACHES AND ON BEETLES OF THE FAMILY PASSALIDAE.

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SUMMARY

This paper, the second of a series on certain families of Mesostigmata-Trigynaspida (Acarina) paraphagic upon millipedes, cockroaches and Passalid beetles from Australia and New Guinea, deals with the family Fedrizziidae. Twenty species in all are recognised, including two from the Island of Buru, and fifteen are described as new. Two new genera *Neofedrizzia* and *Parafedrizzia* are erected.

The species *Toxopeusia*(*Fedrizzia*) *strandi* Oudemans, 1927, from Buru is regarded as a valid species not conspecific with *grossipes* Canestrini, 1884 from Queensland. *Toxopeusia vitzthumi* Ouds., 1927, also from Buru, is also considered a valid species and placed in the genus *Neofedrizzia* but differing from the other known species.

Canestrini's *Fedrizzia laevis* from Queensland is shown to be a species of *Neofedrizzia*.

Pt. 2.—The family FEDRIZZIIDAE.

(Mesostigmata-Trigynaspida.)

Toxopeusiidae. Oudemans, 1927, Ent. Ber. 7(156): 227.

(Type genus and species *Toxopeusia strandi* Ouds., 1927.)

Fedrizziidae. Trägårdh, 1937. Arkiv. f. Zool., 29B(11): 5.

(Type genus and species *Fedrizzia grossipes* Canestrini, 1884.)

The species belonging to this family are to be found associated with Carabid beetles principally of the family Passalidae. They are small round to oval strongly sclerotised mites with flatish venter and more raised convex dorsum. The dorsal shield is entire and furnished usually with numerous pores and fine setae, generally so minute and upstanding that only their bases are to be seen and are difficult to distinguish from pores. In most species the anterior of the dorsal shield overlaps the gnathosoma as a hyaline crescent- or sickle-shaped portion devoid of pores or setae except the one pair of vertical setae. In *Neofedrizzia scutata* n. sp., however, this hyaline portion is extended backwards and expanded laterally to form a shield, devoid of pores and with only some minute setae laterally, which covers about two-thirds of the body before it merges with the posterior of the dorsal shield. Anteriorly the shield underlaps the venter to form a camerostome, is confluent marginally with the ventral shield and underlaps again posteriorly to contour the ventral and anal shields. The gnathosoma arises within the camerostome; there are three pairs of hypostomal setae and the labial cornicles are hyaline and thumb-like with a subapical adpressed claw-like process; the palpi are 5-segmented, the basal segment is broad with a pair of long setae on the inner lamella, the specialised tarsal seta is 2-tined; mandibles with both chelicerae dentate, the movable digit with long hyaline processes two of which are blade-like and serrate, the others filamentous:

within the postero-lateral angles of the camerostome is a triangular sclerotised plate (the "axillar" plates of Sellnick *in lit.*) of unknown function. The legs are short, 6-segmented; I is slender, antennaeform without tarsal caruncle and claws; II-IV are stout, the tarsi with pretarsus, caruncle and indistinct claws, femora of leg IV may be elongate without lamellae (*Fedrizzia*) or short and swollen with lamellae and with a stout curved spine at the posterior inner corner (*Neofedrizzia*) or similar but without the stout curved spine (*Parafedrizzia*).

In the female sex the ventral shields consist of a tritosternum with paired laciniae; a single transverse jugular shield separated from the anterior margin of the sternal shield by a transverse suture and furnished with one pair of setae and one pair of pores; a sternal shield which is coalesced with the endopodal shields of coxae I and is much wider than long, the greatest width being across the postero-lateral arms which extend between coxae II and III, it is furnished with three pairs of setae and one pair of pores, the anterior pair of setae (sternal setae II) are in the antero-lateral angles, the other two pairs (sternal setae III and IV) form a transverse row close to the posterior margin; hinged to the posterior margin of the sternal shield is the sternogynial shield which is shaped somewhat like an inverted bell-jar and is furnished with only one pair of pores in the antero-lateral angles; at the posterior apex of the sternogynial shield is the small reduced mesogynial shield; the latigynial shields are long, narrow and strap-like flanking the sternogynial shield from the mesogynial shield to the antero-lateral corners of the sternogynial shield; the ventral shield is large covering most of the venter, medially it extends forward on each side of the sternogynial shield and between this shield and coxae III and IV with the endopodal shields to which it is coalesced, between the outer margins of the body and coxae II-IV it extends forwards and is coalesced with the exopodal shields, peritremal shields and anteriorly with the underlap of the dorsal shield where it forms the camerostome, on the outer body margins it is coalesced or confluent with the dorsal shield, posterior of coxae IV its margins converge inwards for some distance and are separated from the underlap of the dorsal shield by a somewhat diagonal suture, its posterior margin is wide and transverse separated from the anal shield by a transverse suture, it has few if any setae and its surface is in most species of *Fedrizzia* covered by a grid of fine transverse striae crossed by short longitudinal ones, in other species it is quite smooth; the anal shield is wide and triangular with the anal opening in the posterior angle and usually with a few short setae besides a pair of longer paranal setae; the stigmata are situated between coxae III and IV and the peritremes reach coxae I; outside of the peritremes opposite coxae III is the atrium of a large duct, the outer edge of the atrium being strongly sclerotised.

In the male the jugular shield may be present and separated as in the female, or it may be absent. When absent (*Neofedrizzia*) there is in front of the anterior margin of the sternal shield a pair of anteriorly directed processes of unknown function; the rest of the ventral shields except the anal are all coalesced to form a sterno-ventral shield with the genital orifice near the anterior margin between coxae II or between coxae II and III, the surface may be furnished with a grid of fine striae as in the females of some *Fedrizzia*, or it may be smooth; when a grid is present a forwardly curved line indicates fusion of the ventral and sternal portion; the anal shield is similar to that of the female; in *Parafedrizzia* the anal shield is not demarcated, being coalesced with the rest, as it is also coalesced with the ventral shield in the female of this genus.

Hitherto the only genus included in the family has been *Fedrizzia* Canestrini, 1884 (= *Toxopeusia* Ouds., 1927) with *F. grossipes* Canest., 1884, as type.

In this paper eight species of *Fedrizzia* s. str. are recognised of which six are described as new. Two new genera *Neofedrizzia,* with eleven species, nine of which are new, and *Parafedrizzia* with one new species are erected. Of the previously known species *Fedrizzia* (*Toxopeusia*) *strandi* Ouds., 1927, from the Island of Buru has generally been considered as the same as *grossipes* from

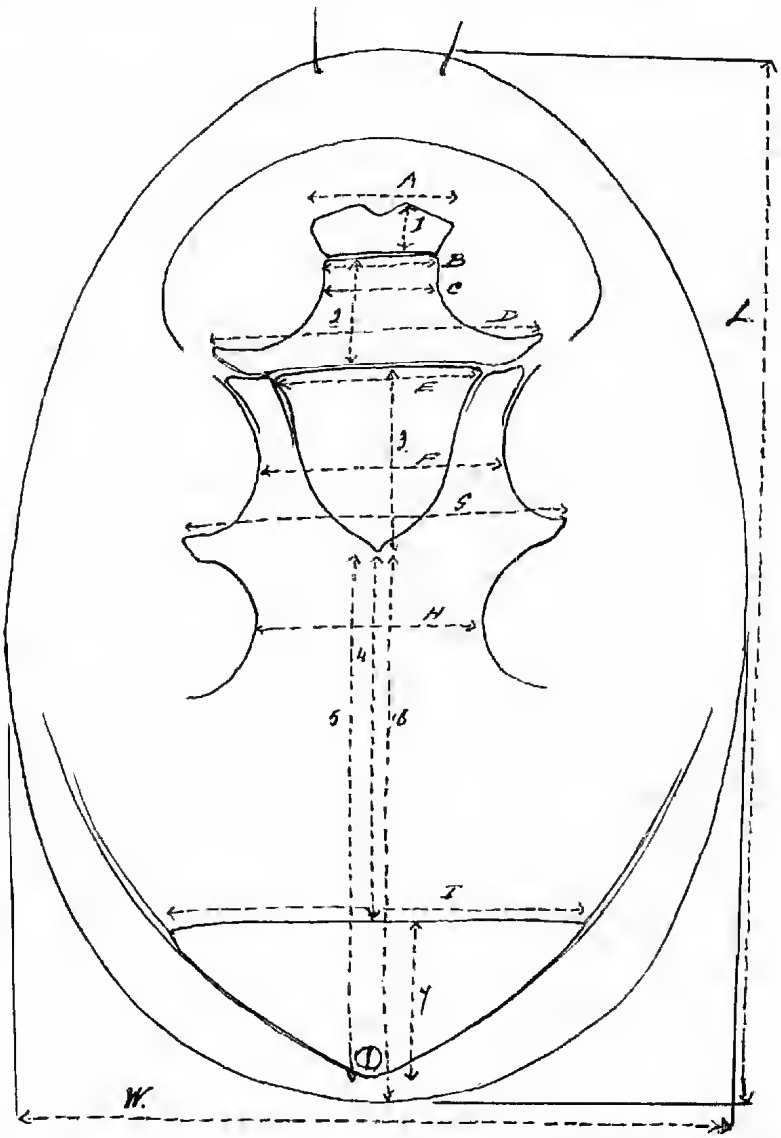

Diagram to illustrate main measurements used: L, length of idiosoma; W, width of idiosoma; 1, length of jugular shield; 2, length of sternal shield; 3, length of sternogynial shield; 4, distance of apex of sternogynial from anterior margin of anal shield; 5, distance from apex of sternogynial to apex of anal shield; 6, distance of apex of sternogynial from end of body; 7, length of anal shield; A, width of jugular shield; B, anterior width of sternal shield; C, width of sternal shield at narrowest part between coxae II; D, greatest width of sternal shield across postero-lateral arms; E, anterior width of sternogynial shield; F, width between coxae III; G, width between points of angles between coxae III and IV; H, width between coxae IV; I, width of anal shield.

Queensland. It is now regarded as a separate and valid species. *Fedrizzia laevis* Canest., 1884, from Queensland is recognised as a valid species of *Neofedrizzia*, as is also *Toxopeusia vitzthumi* Ouds., 1927, from the Island of Buru.

Drs. Camin and Gorirossi in their 1955 paper had before them an undescribed species in which the sternagynial shield was rounded and not tapering as in *grossipes* and in which the male lacked the jugular shield. On these characters they suggest that their material belongs to a new and undescribed genus. It would now seem that they have a species of *Neofedrizzia* as diagnosed in this paper.

That the rounded or tapering character of the sternogynial shield is not a good generic one is shown in the present studies by the occurrence of both forms in both *Fedrizzia* and *Neofedrizzia*.

For the discovery of several features in the morphology of these mites such as the pair of pre-sternal processes in front of the anterior margin of the sternal shield in those species (genus *Neofedrizzia*) in which the jugular shields are absent in the male, and also the presence in the postero-lateral angles of the camerostome of a small well sclerotised triangular plate, as well as for other help and advice I wish to record my grateful thanks to Dr. Sellnick.

Geographically species of this family will probably be found to occur in the tropical and semi-tropical regions wherever beetles of the family Passalidae and its allies occur. So far, however, species have been or are now described from the Moluccas, New Guinea, and the rain forest area of eastern Australia.

The following species are dealt with in this paper:—

Genus Fedrizzia s. str. Canest., 1884.

grossipes Canest., 1884.	Queensland, Australia.
sp. cf. *grossipes* Canest., 1884 (Sellnick *in lit.*)	Queensland, Australia.
sellnicki sp. nov.	Queensland, Australia.
carabi sp. nov.	Aiyura, New Guinea.
derricki sp. nov.	Queensland, Australia.
oudemansi sp. nov.	New South Wales, Australia.
bornemisszai sp. nov.	Queensland, Australia.
strandi (Ouds., 1927)	Is. of Buru, Moluccas.

Genus Neofedizzia nov.

gayi sp. nov.	Queensland, Australia.
canestrinii sp. nov.	Queensland, New South Wales, Australia.
cynola sp. nov.	New South Wales, Australia.
camini sp. nov.	New South Wales, Australia.
gorirossiae sp. nov.	Queensland, Australia.
tragardhi sp. nov.	New South Wales, Queensland, Australia.
brooksi sp. nov.	Queensland, Australia.
vidua sp. nov.	Queensland, Australia.
scutata sp. nov.	Bulolo, New Guinea.
laevis (Canest., 1884)	Queensland, Australia.
vitzthumi (Ouds., 1927)	Is. of Buru, Moluccas.

Genus Parafedrizzia nov.

bulolaensis sp. nov.	Bulolo, New Guinea

Key to the genera of the family *Fedrizziidae*

1. Jugular shields coalesced medially to form a transverse shield separated from the sternal shield in both sexes. Sternogynial shield rounded posteriorly to bell-jar shape with tapering sides and apical

knob. A triangular anal shield present or not. One of the two long setae on basal segment of palpi with 6-9 long branches, other nude. Femora of legs II-IV elongate and truncheon like or short and wide but without a strong curved spine at posterior angle. 2

Such jugular shields absent in male being coalesced with sternal shield; in front of sternal with a pair of free or basally fixed forwardly directed processes and the basal part of tritosternum bulbous. Sternogynial shield evenly rounded or bell-jar shaped. Anal shield present. Both long setae on basal palpal segment only shortly ciliated. Femora of legs II-IV short and broadly swollen with lamellae and with a strong curved spine at posterior angle.

Genus *Neofedrizzia* nov.
Type *N. gayi* sp. nov.

2. Anal shield absent, coalesced with ventral shield in both sexes. Elongate species widest behind middle in line of coxae IV. Femora III and IV short and swollen with lamellae, but with only a straight normal seta at posterior corner.

Genus *Parafedrizzia* nov.
Type *P. buloloensis* sp. nov.

Anal shield present in both sexes. Rounded species. Femora III and IV elongate, longer than wide and truncheon like, without lamellae.

Genus *Fedrizzia* Canest., 1884.
Type *F. grossipes* Canest., 1884.

Genus Fedrizzia Canestrini, 1884

Canestrini, G., 1884. Acari nuovi o poco noti II. Acari dell'Australia—Atti del. R. Instituto Veneto II(6): p. 707.

Type *F. grossipes* Canest., 1884.

= *Toxopeusia* Oudemans, A. C., 1927. Acarol. Aanteekeningen. LXXXVII. Ent. Ber. 7 (156): 227; Fauna Buruana. Acari, in Treubia 7, Suppl. 2: p. 60.

As differentiated in the preceding discussion and diagnosis of the family and as in the key to genera.

Fedrizzia grossipes Canestrini, 1884

Fedrizzia grossipes Canest., 1884. Atti del R. Inst. Veneto II(6): p. 707, pl. 8, figs. 1-2.

This species was originally described by Canestrini from specimens found on beetles "allied to the European *Geotrupes*" from Queensland collected by the late Prof. F. Pulle of the University of Padova. Later, in 1927, and more fully in 1928, Oudemans described the genus *Toxopeusia* with *strandi* sp. nov. as type, from "in fungi" from the Island of Buru. This genus is now accepted as synonymous with Canestrini's *Fedrizzia*. In his figures and descriptions of *grossipes* Canestrini shows a moderately elongate oval form which however differs considerably in the ratio of length to width as given by the quoted dimensions, from that shown by his figure. The dimensions quoted in the description are: length in both sexes 900μ, width of male 520μ, of female 530μ, which gives a ratio of approximately 1·70 : 1·0 for length to width. In the figures, assuming the length to be correct the width would be approximately 620μ for the male and 630μ for the female or a ratio of length to width of approximately 1·44 : 1·0. This consideration suggests that the dimensions given in the text should have been 620μ and 630μ respectively.

I am very greatly indebted to my colleague Dr. Max Sellnick of Hamburg who has examined the types of both male and female of *grossipes* which were

sent to him by Dr. Valle Parma, for the following measurements of these specimens:

Type ♀ : length of idiosoma 918μ, width 612μ (which gives a ratio of length to width 1·5 : 1·0).

Type ♂ : length of idiosoma 900μ, width 594μ (which gives a ratio of length to width of 1·51 : 1·0).

These measurements confirm the view expressed above that the widths given by Canestrini were probably an error in printing.

Other dimensions of the type specimens for which I am also deeply indebted to Dr. Sellnick are:

Female.

Jugular shield (tetartosternum) 120μ wide by 28μ deep medially.

Sternal shield, length medially 84μ, width anteriorly 100μ, width between coxae II (i.e. narrowest part) 88μ, maximum width of postero-lateral arms 304μ.

Sternogynial shield, 124μ long by 160μ wide anteriorly, distance of posterior edge from anterior of anal shield 306μ and from posterior edge of body 486μ.

Ventral shield, distance between coxae III 196μ, between angles between coxae III and IV 296μ and between coxae IV 176μ.

Anal shield, 324μ wide by 135μ long (deep) (ratio of width: length = 2·4 : 1·0).

Male.

Jugular shield (tetartosternum) 80μ wide by ? long.

Sterno-ventral: width between antero-lateral angles 120μ, between angles between coxae II and coxae III 288μ; between angles between coxae III and coxae IV 280μ, width between coxae II 84μ, between coxae III 188μ and between coxae IV 172μ, distance from anterior border to anterior edge of genital orifice 60μ, genital orifice 52μ long by 72μ wide.

Anal shield: 320μ wide by 125μ long (ratio of width: length = 2·5 : 1·0).

Fedrizzia sp. cf. **grossipes** Canest., 1884

Text fig. 1 A-K

Some few years ago I sent to my friend and colleague, Dr. Max Sellnick, of Hamburg, some material of several species of *Fedrizzia* s.l. of which he very kindly made dissections and studied them.

Amongst this material were a number of specimens from a Passalid beetle from Imbil, Queensland (coll. J. F. Gay, 11th Sept., 1946) which, after comparison with the type male and female of *F. grossipes* Canest. received by him from Dr. Valle Parma, he considered (*in lit.*) to be conspecific therewith. A study of Sellnick's dissections and of other entire specimens and a comparison of their detailed measurements with those given to me by him of the types of *grossipes* convinces me that the Imbil specimens are specifically distinct therefrom. In the present study it is shown that the many species of the genera *Fedrizzia* and *Neofedrizzia* are very constant in certain specific characters as follows: (1) overall size which varies but little and which does not differ much between the sexes; (2) the shape, whether more or less rounded or more elongate; (3) the dimensions of the anal shield.

However, in deference to Dr. Sellnick's opinion as expressed in correspondence I refrain for the present from giving a specific name to this species, comparing it with *grossipes* Canestrini.

Material studied.—A number of specimens of both sexes from Passalid beetles from Imbil, Queensland, 11th Sept., 1946 (coll. F. J. Gay). Also 2 males and 2 females from Yarramon, Queensland, 29th Aug., 1935, host? (coll. A.R.P.), and

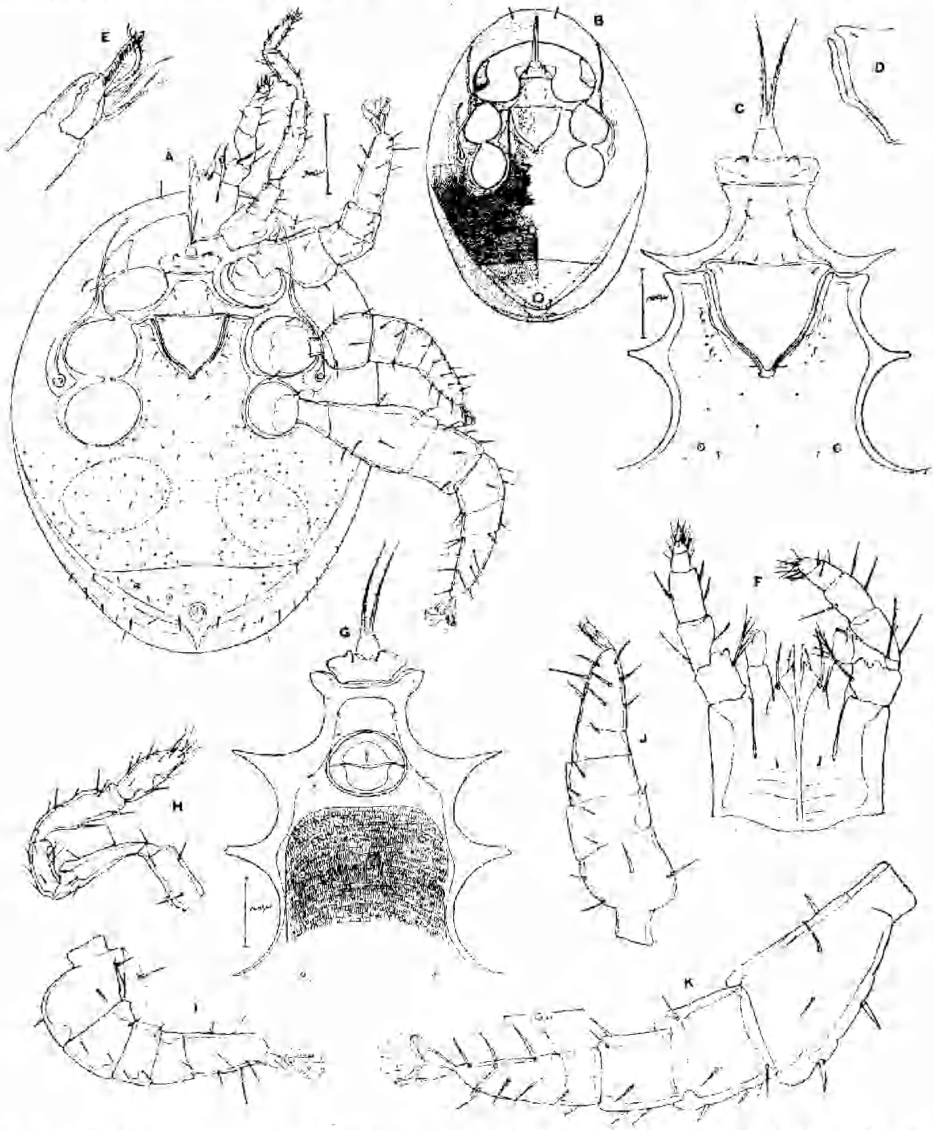

Fig. 1.—*Fedrizzia* sp. cf. *grossipes* Canest., 1884, A-F, H-K Female: A, ventral view; B, venter (after Sellnick) showing camerostome, axillar plates and ornamentation; C, tritosternum, jugular, sternal, sternogynial, and latigynial shields, enlarged; D, latigynial shields separated from sternogynial; E, chelicerae; F, gnathosoma and palpi; H, leg I; I, leg II; J, leg III; K, leg IV; G, Male, tritosternum, jugular and sternal shields.

1 male from *Aulacocyclus* sp. (Passalidae) from Dalby, Queensland, 25th Dec., 1952 (coll. H. Geary). Also 1 male from *Mastochilus dilatus* Dalm., Washpool Crk., near Tenterfield, N.S.W., 8th Oct., 1956 (coll. G. F. Bornemissza).

Description—Female (from Imbil).—Broadly oval to roundish in shape. Length of idiosoma 1160μ, width 870μ.

Dorsum with numerous small pores or setae bases—if the latter than the setae are exceedingly minute and upstanding.

Venter—Base of tritosternum wider than long in the ratio of 10 : 9; jugular shield as figured, 146μ wide by 42μ long, with rounded antero-lateral corners, anterior margin straight and only indented medially, the single pair of setae 25μ long curved backwards and 61μ apart, the one pair of lyriform pores 75μ apart and nearer to the posterior than to the anterior border; sternal shield with the anterior margin transverse and 105μ wide, sides contouring the edges of coxae II and continuing between coxae II and III to a maximum width of 366μ between the ends of the postero-lateral arms, narrowest part just behind anterior margin 99μ, posterior margin straight medially for 150μ then curving posteriorly for a width of 45μ before running obliquely forwards to the tips of the postero-lateral arms of the shield, shield with three pairs of setae and one pair of lyriform pores, the setae are all short ca. 10μ long, the anterior pair of setae are 47μ behind the anterior margin and 70μ apart, the other two pairs form a transverse row near the posterior border, the medial pair 38μ apart and 28μ from each lateral, the single pair of pores are behind the anterior pair of setae 38μ in front of the posterior margin and 75μ apart; the sternogynial shield is somewhat like an inverted bell-jar or cone with more or less pronounced apex, it is 141μ long by 169μ wide anteriorly, ratio of width to length = 1·2 : 1·0, with the pair of lyriform pores in the antero-lateral angles 126μ apart; latigynial shields long and strap-like, widening just beyond the middle to the anterior end; mesogynial shield small and reduced; ventral shield as in the generic diagnosis, its posterior margin transverse, straight and 400μ wide, furnished with many minute setae and pores; anal shield triangular 400μ wide by 14μ long, ratio of width to length = 2·86 : 1·0.

Gnathosoma as in generic diagnosis.

Legs—I 440μ long, II 480μ, III 510μ, IV stout 812μ (femur elongate expanding gradually to 164μ wide at apex).

Male (from Imbil).—Of the same size and shape as the female.

Dorsum as in female.

Venter—Jugular shield smaller and narrower than in the female and fitting into a median depression of the anterior margin of the sternal shield, the setae and pores are near the anterior margin, the setae 36μ apart; sterno-ventral shield as figured and in the genus, anterior margin 132μ wide with a wide and fairly deep excavation, the width across the arms between coxae II and III 352μ, and between these and the antero-lateral corners it narrows to 103μ, it carries anteriorly of the posterior of the genital orifice three pairs of minute setae and two pairs of pores, the anterior two pairs of setae are in front of the orifice and equidistant apart while the third pair is just posterior of the middle of the orifice, the anterior pores are in the antero-lateral angles and the second anterior of the third pair of setae; the rest of the shield behind the orifice has a number of pores and a few minute setae; the genital orifice is large 75μ long by 103μ wide and is placed in a line between coxae II and III; the anal shield is as in the female, 406μ wide by 139μ long.

Fedrizzia sellnicki sp. nov.

Text fig. 3 A-I

Types—Holotype female and allotype male from a Passalid beetle from Mt. Lamington, Queensland, 1946 (coll. ?), represented by three slides of dissections of each sex made by Dr. M. Sellnick and now in the South Australian Museum.

Other Material—Three females from a Passalid from Mt. Glorious, Queensland, 6th February, 1951 (coll. E. H. Derrick); two females and two males from a Passalid from Dalby, Queensland, 28th February, 1925 (coll. H. Geary).

Description—Female holotype—Of the same general facies and size as in *grossipes* Canest. Length of idiosoma 1195μ, width 928μ, ratio length to width = 1·28 : 1·0.

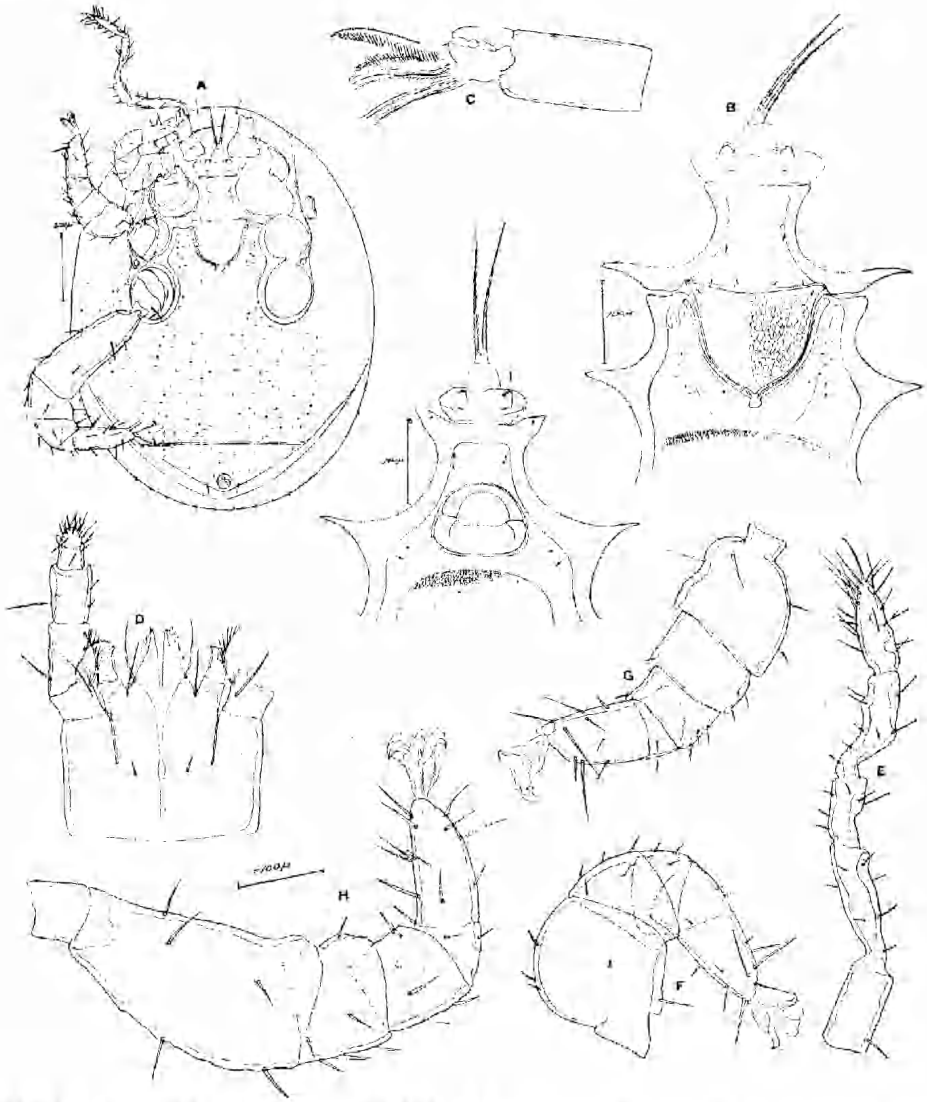

Fig. 2.—*Fedrizzia sellnicki* sp. nov., A-II Female; A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, chelicerae; D, gnathosoma and palp; E, leg I; F, leg II; G, leg III; H, leg IV; I, Male tritosternum, jugular and sternal shields.

Dorsum—Shield entire, covering the whole of the dorsum and underlapping venter as in other species.

Venter—Base of tritosternum slightly longer than wide; jugular shield as figured 150μ wide and 47μ long (deep) with rounded antero-lateral corners,

anterior margin straight except for a median depression, with one pair of setae ca. 30μ long curved backwards and 61μ apart and with one pair of lyriform pores 75μ apart and slightly nearer the posterior than the anterior margin; sternal shield with the anterior margin transverse and 122μ wide, sides contouring the edges of coxae II and continuing between coxae II and III to a maximum width of 366μ between the ends of the postero-lateral arms, narrowest part just behind anterior margin 94μ, posterior margin lightly convex medially for a width of 169μ, then curving posteriorly for a width of 47μ on each side before running obliquely forwards to the tips of the postero-lateral arms of the shield, shield with three pairs of minute setae and one pair of lyriform pores, the anterior pair of setae in line with the narrowest part in the mid-line of coxae II and 65μ apart, the other two pairs form a transverse row along the posterior margin with the median pair 42μ apart and 35μ from the laterals, the single pair of pores posterior of the anterior pair of setae; the sternogynial shield is bell-jar shaped with the anterior margin wider than the length, 164μ by 117μ, ratio width to length = 1·4 : 1·0, with a pair of lyriform pores in the antero-lateral angles; latigynial shields slender and strap-like; mesogynial shield reduced; ventral shield as in the generic diagnosis, its posterior margin transverse and 460μ wide, with a few pores and at least one pair of setae apically; anal shield triangular 450μ wide by 185μ long, ratio width to length = 2·43 : 1·0, with a few pores and minute setae posteriorly besides the pair of longer paranal setae.

Gnathosoma as in generic diagnosis.

Legs—Similar to *grossipes* Canest., I 650μ long, II 545μ, III 508μ, IV 870μ (femur long and gradually expanding to 174μ wide at apex).

Male allotype (from Imbil). Of the same general facies and size as in the female.

Dorsum as in the female.

Venter—Jugular shield smaller and narrower than in female 103μ by 42μ and fitting into the excavated anterior margin of the sternal shield, the single pair of recurved setae are on the anterior margin and 51μ apart, the single pair of pores are more posterior and 56μ apart; sterno-ventral shield as figured and as in the genus, anterior margin 155μ, narrowest between midline of coxae II 103μ and widest across the postero-lateral arms 366μ, anterior of the genital orifice it carries a pair of minute setae in the antero-lateral angles 126μ apart and another 56μ apart a little way in front of the orifice and about in line with the middle of coxae II, and a third pair in line with the posterior edge of the orifice and 164μ apart, a pair of pores lie about 10μ in front of the second pair of setae and the same width apart and a second pair of pores lie 10μ behind the third pair of setae and 188μ apart, the rest of the shield posterior of the genital orifice carries a number of fairly large pores and many minute setae, the genital orifice is large 108μ wide by 85μ long and is situated in a line between coxae II and III; the anal shield is triangular as in the female and of the same dimensions.

Gnathosoma and *Legs* as in female.

Fedrizzia carabi sp. nov.

Text fig. 3 A-I

Types—Holotype female, one paratype female, allotype male and one paratype male from a Carabid beetle from under a log at Alyura, New Guinea, at 5,000 ft., July, 1954 (Coll. H.W.).

Description—Female holotype—Of the same general facies of other species of the genus; rather small, length of idiosoma 835μ, width 638μ, ratio length to width = 1·31 : 1·0.

Dorsum—Shield entire covering the whole body and under-lapping ventrally as in other species.

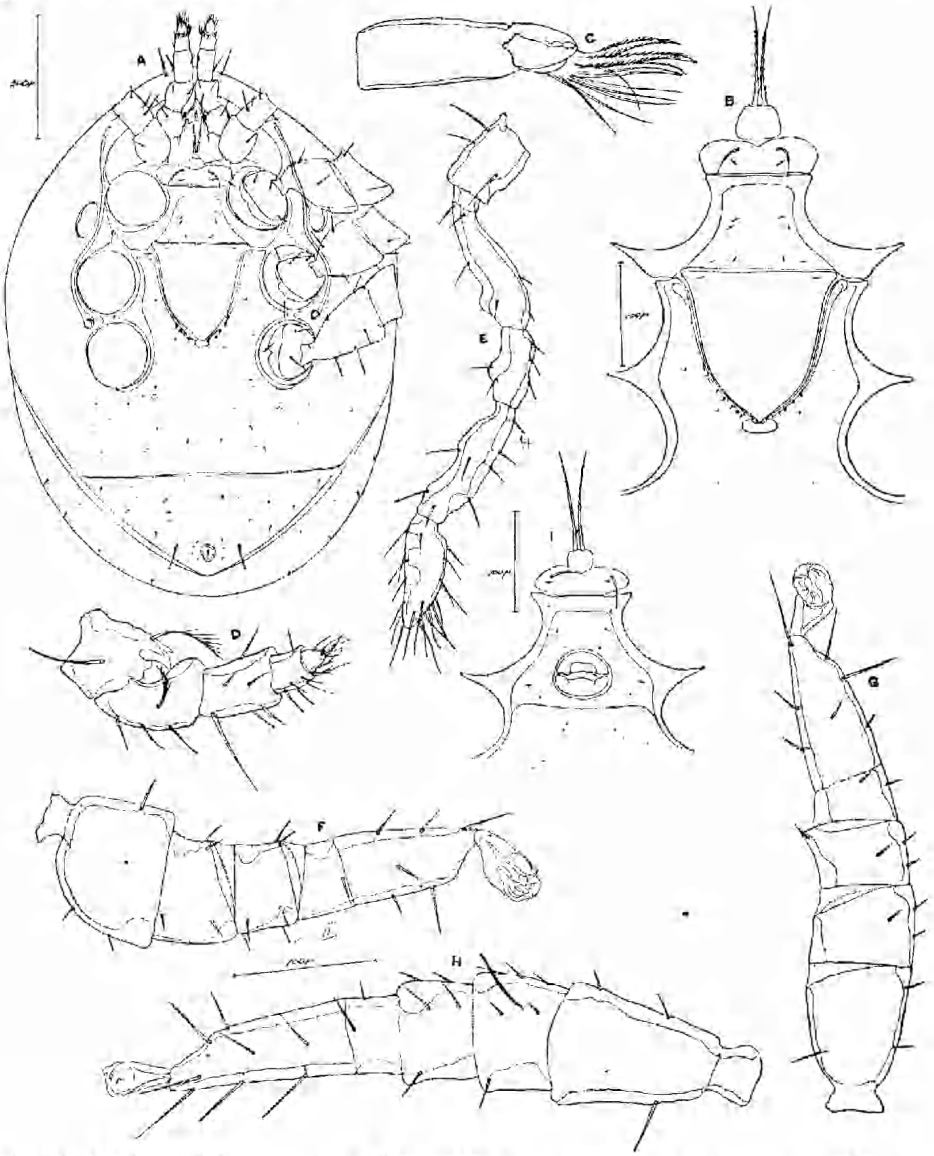

Fig. 3.—*Fedrizzia carabi* sp. nov. A-H Female: A, venter; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, mandible and chelicerae; D, palp; E, leg I; F, leg II; G, leg III; H, leg IV; I, Male, tritosternum, jugular and sternal shields.

Venter—Tritosternum with rather broad conical base and paired ciliated laciniae; jugular shields coalesced medially to form a single transverse crown-like shield, 105μ wide anteriorly but narrower posteriorly where it contours the anterior margin of the sternal shield, 38μ long, with one pair of curved fine

setae in anterior margin and 52μ apart, and one pair of lyriform pores more posterior; sternal shield coalesced with the endopodal shields of coxae II, anterior margin almost straight 108μ wide, sides curving inwards slightly in midline of coxae II to 89μ wide and then outwardly around coxae II to a width of 282μ between coxae II and III, length of shield 103μ, posterior margin straight for 127μ then with a posterior projection 24μ wide on each side and thereafter running obliquely forward to the apices of the postero-lateral arms between coxae II and III, with three pairs of setae and two pairs of pores, the anterior pair of setae in line with middle of coxae II, the others in a transverse row near the posterior margin, the inner pair 52μ apart, and 19μ from the laterals; sternogynial shield shaped like an inverted bell-jar with straight anterior margin 141μ, and 141μ long, ratio width to length = 1·0 : 1·0, with one pair of pores in the antero-lateral angles; latigynial shields long and strap-like contouring the sides of the sternogynial shield and partly hidden under the inner edges of the anterior arms of the ventral shield; mesogynial shield very much reduced; ventral shield large, occupying most of the venter as in other species, the transverse posterior margin 330μ wide, externally of the peritreme between coxae II and III there is a duct or gland opening with the outer edge bow-shape and well sclerotised; the anal shield is triangular with transverse anterior margin 330μ wide, and the length 150μ, ratio width to length = 2·2 : 1·0.

Gnathosoma, chelicerae and *palpi* as in other species.

Legs—I 410μ long, II-IV stout and thick but not strikingly so as in *grossipes*, II 410μ long, III 376μ, IV 450μ, with the femur 89μ across at apex.

Male allotype—Of the same general facies as the female; length of idiosoma 835μ, width 638μ.

Dorsum as in female.

Venter—Generally as in other species of the genus. Jugular shield separated from sternal as figured 98μ wide by 24μ long, with one pair of setae on anterior margin 70μ apart, and one pair of pores; sterno-ventral shield anteriorly slightly wider 122μ than the jugular shield with lightly concave anterior margin, it narrows to 103μ between coxae II and then expands to 282μ across the arms between coxae II and III; the genital orifice is fairly large 70μ wide by 56μ long, and lies between coxae II and III; the anal shield is large, triangular with anterior margin 350μ wide and its length 150μ.

Legs—As in the female, II-IV stout and thick, but IV not so markedly so as in *grossipes* and *sellnicki*.

Remarks—This species is one of the smaller of the genus so far known and can be separated as in the key to the species.

The specimens are in the collections of the South Australian Museum.

Fedrizzia derricki sp. nov.

Text fig. 4 A-I

Types—The holotype female, allotype male and two paratype males from Atherton, Queensland. The holotype and allotype were collected from Passalids, April, 1945 (D. L. Collis) and the two paratype males from a *Megisthanus* sp. (Acarina), 28th March, 1945 (D. L. Collis).

Description—Female holotype—A medium sized species with the general facies of the genus. Length of idiosoma 928μ, width 660μ, ratio of length to width = 1·4 : 1·0.

Dorsum—As in other species with the shield entire and under-lapping the venter; with few if any minute setae.

Venter—Tritosternum with rather broad basal piece and paired ciliated laciniae; jugular shields coalesced medially to form a single transverse shield 117μ wide by 32μ long, with the anterior margin medially excavate to fit the posterior margin of the tritosternum, posterior margin straight and shorter than

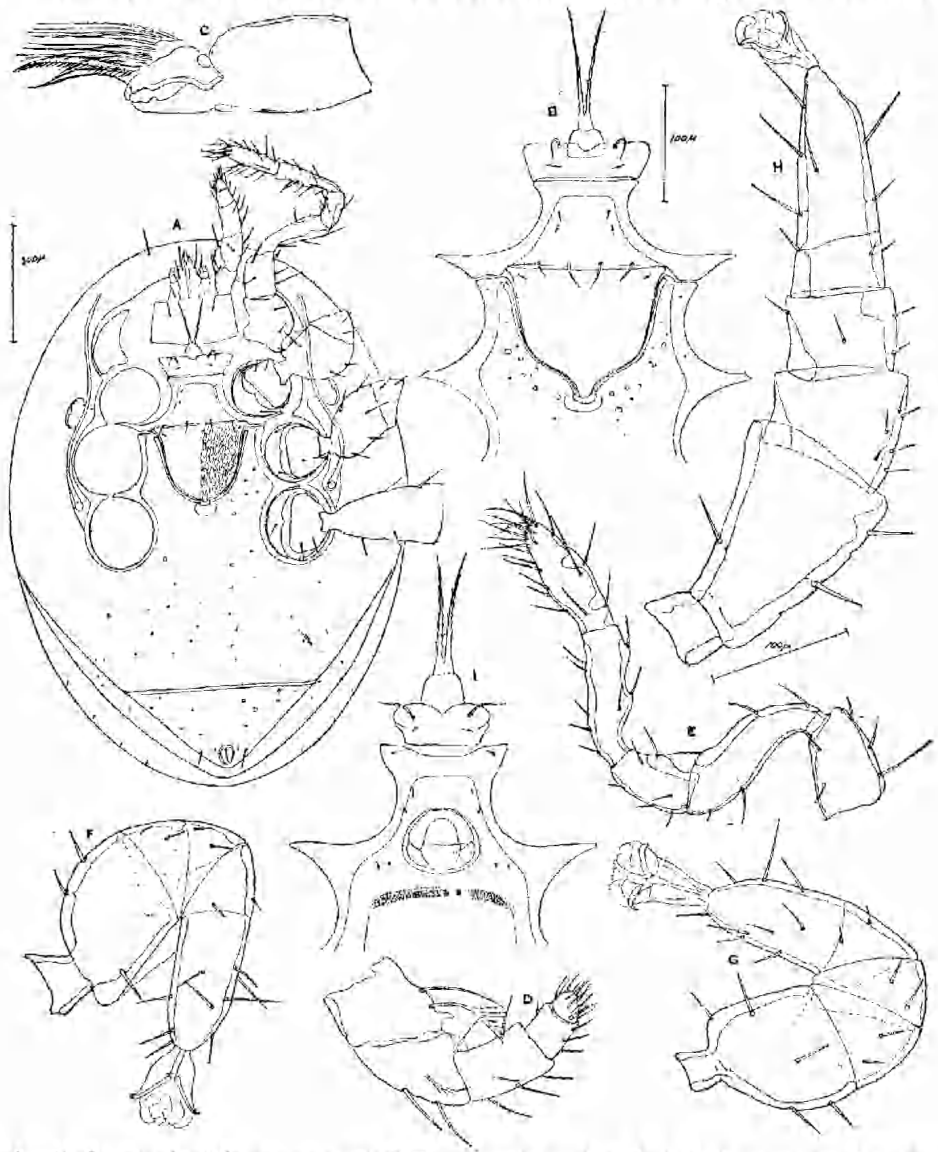

Fig. 4.—*Fedrizzia derricki* sp. nov. A-H Female: A, venter; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, mandible and chelicerae; D, palp; E, leg I; F, leg II; G, leg III; H, leg IV; I, Male, tritosternum, jugular and sternal shields.

anterior as figured, with a pair of setae 50μ apart on anterior margin, and a pair of lyriform pores; sternal shield coalesced with the endopodal shields of coxae II, anterior margin straight and 90μ wide, the lateral margins narrow between coxae II to 82μ and then curve around coxae II to a width across the postero-lateral arms between coxae II and III of 258μ, the length of the shield

is 77μ, the posterior margin is straight medially for about 154μ, when it is produced slightly posteriorly for a width of ca. 36μ on each side where it runs forward obliquely to the tips of the postero-lateral arms, it carries three pairs of setae and ? two pairs of pores (the anterior pair cannot be seen), the anterior setae (sternal setae II) are minute, the other two pairs longer and in a transverse row near the posterior margin, the medial pair 27μ apart and separated from the laterals by 30μ; the sternogynial shield is broadly bell-shaped as figured, 154μ wide anteriorly and 126μ long, ratio of width to length = 1·22 : 1·0, it is lightly reticulate and carries one pair of lyriform pores in the antero-lateral angles; the latigynial shields are strap-like and contour the lateral margins of the sternogynial shield, being partially hidden under the inner margins of the anterior inter-coxal arms of the ventral shield; the mesogynial shield is very small as figured; ventral shield large, occupying most of the ventral surface, coalesced with other shields as in the genus, and with a straight transverse posterior border 260μ, with a number of pores; anal shield triangular 260μ wide anteriorly by 127μ long (deep), ratio width to length = 2·04 : 1·0; the peritremal shield is coalesced with the exopodal shields and only separated from outer extension of the ventral shield by a fine line, the stigmata lie between coxae III and IV and the peritreme runs forward to coxae I; on the outer extensions of the ventral shield, fairly close to the peritreme in region of coxae II is the atrium of a large gland of which the outer edge is well chitinised and lip-like.

Gnathosoma arising within the camerostome formed by the anterior underlap of the dorsal shield; hypostome, palpi and chelicerae as in other species.

Legs—As in other species, I 520μ long, antennaeform, angulate, with broad base, without caruncle or claws; II-IV thick and stout but not noticeably so as in *grossipes*, with short pretarsus, caruncle, and claws, II 440μ, III 440μ, IV 556μ long, I-IV 6-segmented.

Male allotype—General facies and size as in female.

Dorsum as in female.

Venter—Tritosternum as in female; jugular shield narrower than the anterior width of sternal, 94μ wide by 37μ long with the posterior border shorter than anterior, fitting into the evenly excavate anterior margin of sternal, with a pair of setae 40μ long and 49μ apart anteriorly and a pair of lyriform pores posteriorly; anterior margin of sterno-ventral shield evenly concave 117μ wide, shield coalesced with endopodal and ventral shields, although a fine line running forward from coxae IV to almost coxae II and extending anteriorly to a short distance from the genital orifice indicates fusion of the ventral shield with the sternal cum endopodal shields of coxae II and III, the posterior margin of the ventral shield is straight, transverse and 260μ wide; the anal shield is 260μ wide by 127μ long; genital orifice between coxae II and III 70μ wide by 61μ long and 47μ from anterior margin.

Gnathosoma as in female.

Legs as in female.

Remarks—I am indebted to Dr. Sellnick for indicating the separation of this species from *grossipes* and the types are each represented in the South Australian collection by four slides of dissections made by him. The two paratype males are entire mounts. The species is dedicated to Dr. E. H. Derrick from whom I have received over the years much interesting material.

Fedrizzia oudemansi sp. nov.

Text fig. 5 A-I

Types—Holotype female and allotype male and a paratype of each sex from *Mastochilus dilatus* Dalm. from under a eucalyptus log at Glen Innes, New South

Wales (coll. G. F. Bornemissza, 9/10/56). One male from *Mastochilus dilatus* Dalm. from Washpool Crk. near Tenterfield, N.S.W., 8/10/56 (G.F.B.).

Description–Female holotype–A rather small species with the general facies as in other species of the genus. Length of idiosoma 777μ, width 580μ, ratio of length to width = 1·34 : 1·0.

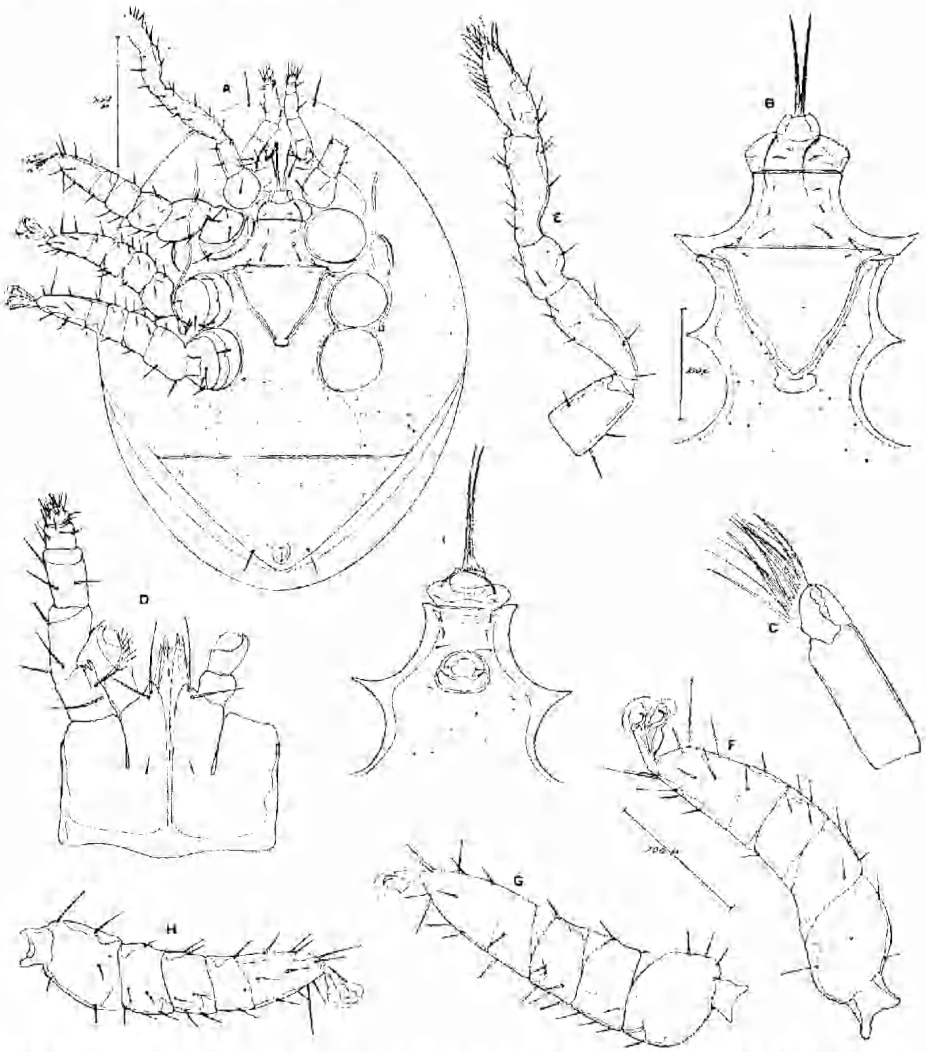

Fig. 5.—*Fedrizzia oudemansi* sp. nov. A-H Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, mandible and chelicerae; D, gnathosoma and palp; E, leg I; F, leg II; G, leg III; H, leg IV; I, Male tritosternum, jugular and sternal shields.

Dorsum–Shield entire, covering the whole of the dorsum and under-lapping venter as in other species.

Venter–Base of tritosternum about as wide as long, with a pair of ciliated laciniae; jugular shield as figured, 94μ wide by 32μ long (deep), crown-shaped, anterior margin convex but with a median concavity for the base of the tritosternum, with one pair of long, 47μ, curved setae in the anterior margin and

42μ apart, with one pair of lyriform pores 37μ apart; sternal shield with the anterior margin transverse and 84μ wide, sides contouring the edges of coxae II and continuing between coxae II and III to a maximum width of 220μ between the ends of the postero-lateral arms, narrowest just behind anterior margin to 75μ, posterior margin straight medially for a length of 141μ then extending posteriorly for 23μ on each side before running obliquely and sharply forwards to the tips of the postero-lateral arms, shield with three pairs of setae and a pair of lyriform pores; the anterior pair of setae are minute in the antero-lateral angles and 45μ apart, the second and third pairs of setae are longer to 19μ and form a transverse posterior row with the medians 61μ apart and 21μ from the laterals, the pores are midway between the anterior and median posterior setae; sternogynial shield wider than long 150μ by 117μ, ratio of width to length = 1·28 : 1·0, with lightly convex but converging sides, anteriorly the margin is transverse forming outwardly produced angles with the lateral margins, the shield carries one pair of lyriform pores in the antero-lateral angles and 94μ apart; latigynial shields slender and strap-like contouring the sternogynial shield and partly hidden under the inner edges of the ventral shield; mesogynial shield reduced; ventral shield as in the generic diagnosis, its posterior margin 400μ wide and straight, with a few pores and minute setae; anal shield triangular with anterior margin 382μ wide and the length 176μ, with a pair of paranal setae 38μ long and with a few pores and minute setae, ratio of width to length = 2·2 : 1·0.

Gnathosoma as in generic diagnosis.

Legs—Similar in general to other species of the genus; I 390μ long, antennaeform and somewhat angulate, II and III 348μ, IV 370μ, IV with femur not much longer than wide, but widening gradually to apex without any strong basal spine.

Male allotype—Of the same general facies as the female. Length of idiosoma 720μ, width 534μ.

Dorsum as in female.

Venter—Jugular shield smaller and narrower than in female, 70μ wide by 25μ long with a single pair of setae anteriorly 30μ long and 52μ apart, with one pair of lyriform pores 50μ apart; sternal, genital-ventral shields coalesced to form the sterno-ventral shield as figured and as in the genus, anterior margin 88μ wide, narrowing between coxae II to 74μ, and widest across the postero-lateral arms between coxae II and coxae III to 206μ, the anterior setae lie in the antero-lateral angles 50μ apart, the second pair of setae lie just in front of the genital orifice and are 52μ apart, the pores lie 14μ in front of the second pair of setae, other setae and pores as far as can be seen as figured, the genital orifice lies between coxae II and III, it is 38μ long by 47μ wide; the anal shield is shaped as in the female with a transverse anterior margin 385μ, and its length 174μ, the pair of long paranal setae 33μ.

Gnathosoma as in female.

Legs—As in female, I 352μ long, II and III 325μ, IV 348μ.

Fedrizzia bornemisszai sp. nov.

Text fig. 6 A-I

Types—Holotype female, allotype male and paratype of each sex from *Mastochilus dilatus* Dalm. from under a eucalyptus log at Hampton, Queensland, 8/11/56 (coll. G. F. Bornemissza).

Description—Female holotype—A fairly large species with the general facies as in other species of the genus. Length of idiosoma 928μ, width 730μ, ratio length to width = 1·27 : 1·0.

Dorsum—Shield entire covering the whole dorsum and under-lapping on to the venter, with many very fine short setae and pores, and with fine roughly transverse widely spaced lines, otherwise smooth.

Venter—Tritosternum with short base about as wide as long, and a pair of long ciliated laciniae; jugular shield wider than anterior width of sternal shield,

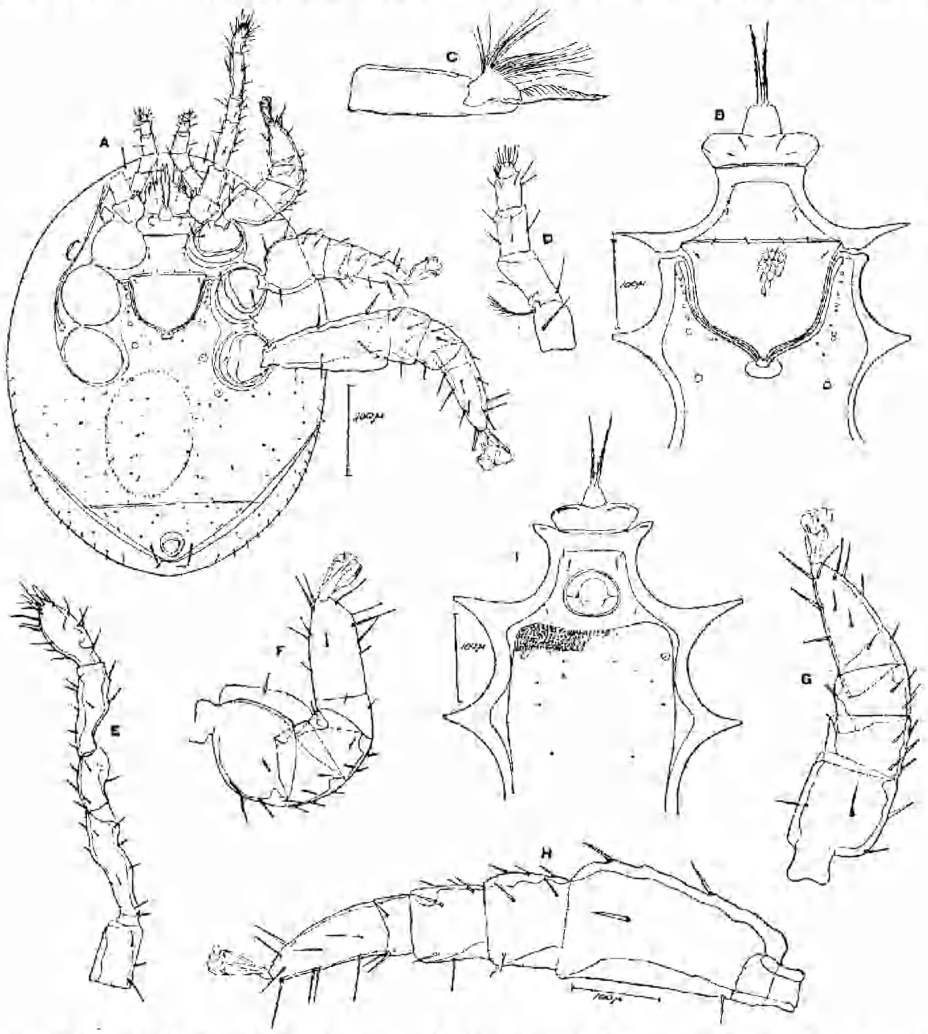

Fig. 6.—*Fedrizzia bornemisszai* sp. nov. A-H Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, mandible and chelicerae; D, palp; E, leg I; F, leg II; G, leg III; H, leg IV; I, Male tritosternum, jugular and sternal shields.

somewhat crown-shaped, width 130μ, length (depth) 38μ, with one pair of setae behind the anterior margin 55μ apart and 25μ long, a pair of lyriform pores 55μ apart, posterior margin straight and 110μ wide; sternal shield as figured, anterior margin 110μ lightly concave for whole length, sides contouring coxae II with the shield narrowest in mid-line of coxae II to 94μ, and widest to 242μ between the points of the postero-lateral arms between coxae II and III, with three pairs of setae and one pair of pores, the anterior pair of setae

are minute and placed some distance, 25μ, back from the middle of the anterior margin and 69μ apart, the other two pairs of setae are also short and form a transverse row close to the posterior margin, of these the medians are 50μ apart and 27μ from the laterals, the pores are situated 14μ behind the anterior setae and a similar distance apart; the sternogynial shield as figured, wider than long, 143μ by 116μ, ratio width to length = 1·23 : 1·0; the surface is ornamented with a strong reticulation, the anterior margin is straight and the antero-lateral corners project shortly laterally, the sides are convex as figured, the pores are in the antero-lateral angles and 130μ apart; the latigynial shields are narrow and strap-like and contour the lateral margins of the sternogynial shield being partly hidden under the inner edge of the portions of the ventral shield lying between the coxae and the sternogynial shield; mesogynial shield small and reduced; ventral shield as in other species of the genus and with the surface ornamented with a fine grid of transverse lines cut by short longitudinal lines, its posterior margin aligns the anterior margin of the anal shield and is 376μ long, it is also furnished with a number of fairly large pores and some very minute setae; the anal shield is triangular, 376μ wide anteriorly and 176μ long, ratio width to length = 2·21 : 1·0, with the surface, as in the ventral shield, the long paranal setae are 25μ long.

Gnathosoma as in the generic diagnosis.

Legs—Generally as in other species, I antennaeform and 533μ long, II-IV stout, II 464μ, III 487μ, IV 730μ, femur of leg IV truncheon-like, 258μ long and 162μ wide at apex.

Male allotype—Of the same general facies as the female. Length of idiosoma 904μ, width 730μ.

Dorsum as in female.

Venter—Jugular shield crown-shaped, smaller than in female, 94μ wide by 33μ long (deep), with the setae ca. 23μ long and 33μ apart, with one pair of lyriform pores; sternal, genital and ventral shields coalesced to form the sterno-ventral shield as figured and as in the genus, anterior margin 131μ, the sides contouring coxae II-IV with the widest sternal portion between coxae II and III and 305μ between the postero-lateral arms; genital orifice large, situated between coxae II, 61μ wide by 52μ long; posterior margin aligned with anterior margin of anal shield and 376μ wide, surface of shield with some large pores, minute setae and with a fine grid or mesh of transverse striations with short longitudinal cross lines; anal shield triangular, 376μ wide and 126μ long as in female.

Gnathosoma as in other species.

Legs as in female, I 520μ long, II 464μ, III 487μ, IV 696μ.

Remarks—As in the key this species belongs to the *grossipes, sellnicki, derricki* group in having the mesh or grid-like surface of the ventral shields in both sexes. The other two known species, *carabi* and *oudemansi*, have smooth non-ornamental ventral shields.

Fedrizzia strandi (Oudemans, 1927)

Toxopeusia strandi Ouds., 1927. Ent. Ber., 7 (156), p. 227; 1928, Fauna Buruana-Acari, in Treubia, 7, Suppl. 2, pp. 60-66, figs. 69-81.

The genus *Toxopeusia* with *strandi* as type has generally been regarded by acarologists as synonymous with *Fedrizzia* Canestrini with *grossipes* Canest. from Queensland as the type. That the two genera are synonymous is undoubted but from the specific features of the species of Fedrizziidae as brought out in the present study *strandi* would appear to be a validly different species from the Australian forms.

Toxopeusia strandi was very fully described and figured by Oudemans in 1928 from two females from "Station 12, Buru, 4-7 Feb., 1922; coll. L. J. Toxopeus"; the habitat was given with a query. A male specimen from "Wai Eno bis Wai Temun, 700-1000m., 3rd Nov., 1922" is described as the male of the same species.

For the female the only dimensions given are length of idiosoma 857μ, width 630μ (ratio of length to width = 1·36 : 1·0). Interpolating from his figures, however, the anal shield is 408μ wide by 150μ long, or a ratio of width to length of 2·72 : 1·0; the sternogynial shield is wider anteriorly than long, approximately 163μ by 115μ, or ratio width to length of 1·42 : 1·0.

Thus in dimensions *strandi* is a broader species than *grossipes* with an anal shield three times as wide as long as compared with an anal shield only slightly more than twice as wide as long in *grossipes*. Other features shown in his description and figures of *strandi* in which this species differs from any of those found in Australia and New Guinea can be mentioned. Firstly he speaks of the pair of vertical setae as being wide apart and show them as being wider apart than in any other species. Behind these setae he describes and figures an eye-like organ on the dorsal surface; no such organ which is probably a pore has been observed in other species. On the ventral surface the pair of setae on the jugular shield (tetartosternum) are shown as in the antero-lateral angles, and not near to or flanking the base of the tritosternum. The tritosternum is stated to have no base, but the drawings, Figs. 70 and 75, show this as is usual in species of this genus, and over-lapped partially by the jugular shield.

On the above considerations as well as from geographical location, the females of *strandi* Ouds. must be regarded as a valid species, not synonymous with *grossipes* Canestrini, 1884.

Whether the male described by Oudemans as the same species is so, seems somewhat uncertain. His specimen was *much* smaller, idiosoma 730μ long by 590μ wide, or a ratio of 1·237 : 1·0, than the females; the anal shield with a ratio of width to length of 2·7 : 1·0. In the absence of definite hosts, and in the fact that the male and females were from different localities, the smaller size suggests a possibility that the male may not be conspecific with the female.

Key to the species of *Fedrizzia* Canest., 1884, s. str.

(largely based on females)

1. Larger species with length of idiosoma greater than 1000μ. 2

   Smaller species, length of idiosoma less than 1000μ. 3

2. Sternogynial shield with the lightly convex sides gradually converging to the apex, 169μ wide anteriorly by 141μ long (ratio width to length = 1·2 : 1·0); anal shield 400μ wide by 140μ long (ratio width to length = 2·86 : 1·0); femur of leg IV 2·23 times as long as it is wide at apex. Length of idiosoma 1160μ, width 870μ (ratio length to width = 1·33 : 1·0). Ventral shield with mesh or grid.

   F. sp. cf. *grossipes* Canest., 1884.

   Sternogynial shield with sides medially almost straight and parallel before curving inwards to the apex, wider anteriorly than long 164μ by 117μ (ratio width to length = 1·4 : 1·0); anal shield 450μ wide by 185μ long (ratio width to length = 2·43 : 1·0); femur of leg IV 2·4 times as long as wide at apex. Length of idiosoma 1195μ, width 928μ (ratio length to width = 1·28 : 1·0). Ventral shield with mesh or grid.

   F. sellnicki sp. nov.

3. Anal shield more than 300μ wide anteriorly. 4

Anal shield small, 260μ wide by 127μ long (ratio of width to length = 2·04 : 1·0); sternogynial shield of nearly uniform width for first half of its length, then sides curving in to apex, 154μ wide anteriorly and 126μ long (ratio width to length = 1·22 : 1·0); femur of leg IV twice as long as it is wide at apex. Length of idiosoma 928μ, width 660μ (ratio length to width = 1·4 : 1·0). Ventral shields with mesh or grid.

F. derricki sp. nov.

4. Anal shield less than 360μ wide, with ratio of width to length less than 2·5 : 1·0. 5

Anal shield greater than 380μ wide. 6

5. Ventral shields with fine mesh or grid. Anal shield 324μ wide by 135μ long, ratio width to length = 2·4 : 1·0; sternogynial shield wider anteriorly than long, 160μ by 124μ, ratio width to length = 1·3 : 1·0; femur of leg IV twice as long as wide at apex. Length of idiosoma 918μ, width 612μ, ratio of length to width = 1·5 : 1·0.

F. grossipes Canest., 1884.

Ventral shields smooth, without mesh or grid. Anal shield 330μ wide and 150μ long, ratio of width to length = 2·2 : 1·0; sternogynial shield as wide anteriorly as it is long, 141μ; femur of leg IV shorter and not so massive, only one fourth as long again as it is wide at apex. Length of idiosoma 835μ, width 638μ, ratio length to width = 1·31 : 1·0.

F. carabi sp. nov.

6. Ventral shields without grid or mesh. Anal shield 382μ wide by 176μ long, ratio width to length = 2·2 : 1·0; sternogynial shield wider anteriorly than long 150μ by 117μ, ratio width to length = 1·28 : 1·0; femur of leg IV not much thicker than III, about 1·3 times as long as wide at apex. Length of idiosoma 777μ, width 580μ, ratio length to width = 1·34 : 1·0.

F. oudemansi sp. nov.

Ventral shields with mesh or grid. 7

7. A more broadly rounded species, length of idiosoma 928μ, width 730μ, ratio of length to width = 1·27 : 1·0. Sternal setae II-IV very minute. Anal shield 406μ wide by 139μ long, ratio width to length = 2·9 : 1·0; sternogynial shield reticulate wider anteriorly than long, 143μ by 116μ, ratio width to length = 1·23 : 1·0, sides almost parallel medially before curving to the apex; leg IV massive as in *grossipes*, femur more than twice as long as wide at apex.

F. bornemisszai sp. nov.

A less broadly rounded species, length of idiosoma 857μ, width 630μ ratio of length to width = 1·36 : 1·0. Sternal setae longer. Anal shield 408μ wide by 150μ long, ratio of width to length = 2·72 : 1·0; sternogynial shield ? smooth, wider anteriorly than long ca. 163μ by 115μ, ratio 1·42 : 1·0, with gradually converging sides; leg IV not so massive, femur ca. 1·6 times as long as wide at apex.

F. strandi Ouds., 1927.

Genus Neofedrizzia nov.

The species of this genus while having the general facies of the family differ from both other genera *Fedrizzia* Canestrini s. str. and *Parafedrizzia* gen.

nov. in that a free jugular shield is absent in the male. In that sex in front of the anterior margin of the sternal shield there is a pair of stout anteriorly directed processes of unknown function which overlie the bulbous base of the tritosternum. In both sexes the two long setae on the second segment of the palpi are only shortly ciliated or barbed. The femora of legs III and IV are short and wide with a prominent thick curved spine at the posterior corners in both males and females. The anal shield is present as in *Fedrizzia*. The body form may be somewhat rounded with curved sides or more elongate with the sides somewhat straighter.

Type *Neofedrizzia gayi* sp. nov.

Neofedrizzia gayi sp. nov.

Text fig. 7 A-K

Types—Holotype female, allotype male, two paratype females and one paratype male from a Passalid beetle in rotten log from Imbil, Queensland, 11th Sept., 1946 (F. J. Gay). Three females and five males also from a Passalid at Yarraman, Queensland, 29th Aug., 1935 (A.R.P.).

Description—Holotype female—A moderately large heavily chitinised species with the general facies of *Fedrizzia* s. str., broadly oval with rounded sides. Length of idiosoma 1210μ, width 850μ.

Dorsum—Shield covering all the dorsum and under-lapping ventrally and anteriorly to form the anterior margin of the camerostome, marginally it is confluent with or coalesced with the outer edge of the large ventral shield as far back as the posterior edge of coxae IV then under-lapping the venter in a wide strip contouring and separated by a suture from the posterior part of the ventral and from the anal shield; dorsally a more hyaline sickle-shaped part is more or less demarcated by a line from the rest and overlaps the gnathosoma; this portion carries only the pair of vertical setae 47μ long and 94μ apart, but the rest of the dorsal shield is furnished with numerous pores but no perceptible setae.

Venter—Tritosternum as figured with an elongate basal part 70μ long and with paired ciliated laciniae to 140μ long; jugular shields coalesced medially to form a single crown-shaped shield 146μ wide and 66μ long (deep) with the posterior margin 108μ wide, with one pair of recurved setae on anterior margin flanking base of tritosternum 38μ apart and ca. 23μ long, with one pair of lyriform pores subposteriorly; sternal shield coalesced with the endopodal shields of coxae II, 108μ wide anteriorly, narrowing to 98μ in midline of coxae II then contouring coxae II to a width of 320μ across the postero-lateral arms between coxae II and III, the shield is 146μ long (deep), the posterior margin is only lightly concave for its whole width of 256μ before running obliquely forwards to the tip of the arms, with three pairs of setae and ? one pair of pores, the anterior pair of setae (sternal setae II) are more or less in the antero-lateral angles and in front of the pores which are rather wider apart, the other two pairs of setae (sternal setae III and IV) lie in a transverse row near the posterior margin the medians being 65μ apart and 19μ from the laterals, all three pairs of setae are short, ca. 11μ long; sternogynial shield longer than wide, 146μ by 126μ anteriorly with lightly convex converging sides and rounded apex, with one pair of lyriform pores near the antero-lateral corners, in line with the pores the shield is somewhat wider than the anterior margin; latigynial shields strap-like contouring the sides of the sternogynial and largely lying beneath the inner edges of the ventral shield (see Fig. 7 B and J); mesogynial shield reduced and covered by apex of sternogynial shield; ventral shield large occupy-

ing most of the ventral surface, marginally confluent or coalesced with the dorsal shield from the apex backwards to the region of coxae IV where it curves inwards to the antero-lateral corners of the anal shield and is contoured by that part of the under-lapping dorsal shield, between the antero-lateral corners of the anal shield it has a straight transverse margin separated by a suture from the transverse margin of the anal shield, antero-laterally it is coalesced with

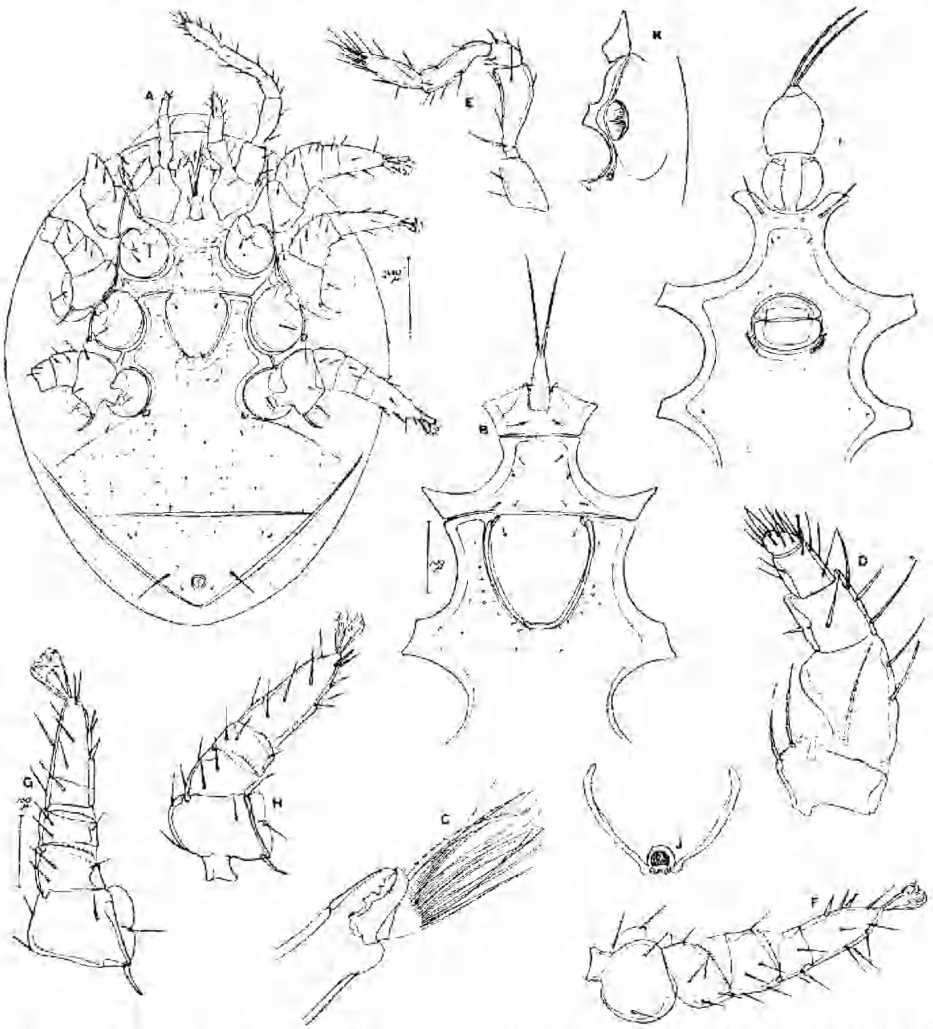

Fig. 7.—*Neofedrizzia gayi* g. et sp. nov. A-H, J-K, Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, chelicerae; D, palp; E, leg I; F, leg II; G, leg III; H, leg IV; J, latigynial and mesogynial shields; K, atrium of duct between coxae II and III; I, Male tritosternum, pre-sternal appendages and sternal shield.

peritremal and exopodal shields of coxae II-IV, medially it extends forwards as two arms as far as posterior margin of the sternal shield and between the sternogynial shield and the coxae on each side, with the endopodal shields of which it is coalesced, the posterior margin is 520μ wide and it is furnished with numerous pores and a few minute inconspicuous setae; from the posterior edge of coxae IV a fine line runs obliquely backwards and outwards towards the

body edge which it does not reach, from coxae III another fine line runs backwards and then curves forwards but does not reach the body edge, in the outside junction of coxae II and III is the atrium of a large duct the inner edges of which are strongly sclerotised; the peritremal shield is coalesced with the endopodal and ventral shields, with the stigmata lying between coxae III and IV and the peritreme running forward as figured to coxae I; the anal shield is large, triangular, 520μ wide on the transverse anterior margin and 220μ long (deep) with anus in the posterior angle, it carries many pores and a pair of long paranal setae 70μ.

Gnathosoma—Much as in species of *Fedrizzia*; chelicerae as figured, fixed digit with two strong and one smaller tooth, movable digit with a strong subbasal tooth and subapically with minute denticles, with many hyaline processes two of which are blade-like and serrate, the others filamentous; palpi as figured, trochanter large and broad with an inner lobe anteriorly and two long barbed setae, specialised seta on tarsus two-tined; the mouth parts together with leg I arise within the camerostome, which in the lateral angles has a triangular sclerotised plate (the "axillar" plate of Sellnick *in lit.*).

Legs—All shorter than the body and 6-segmented, I slender and antenniform, strongly angled, tarsus without caruncle or claws, 552μ long; II-IV shorter and stout, tarsi with caruncle and paired claws, II 508μ long, III 508μ, IV 557μ, the femora of II-IV are short and broad, with distinct hyaline lamellae, on III and IV the outer posterior angle of the femora carries a strong curved posteriorly directed spine characteristic of the genus.

Allotype male—Of the same size and general facies as in the female.

Dorsum as in female.

Venter—Tritosternum with a large bulbous basal part, 84μ long by 84μ wide, and a pair of ciliated laciniae 140μ long; no jugular shield; in front of the deeply concave anterior margin of the sternal shield and lying above the base of the tritosternum is a pair of free anteriorly directed processes curved inwardly to one another and apically bilobed, these processes of unknown function are 94μ long and 33μ wide as figured; the rest of the ventral shields except the anal are coalesced into a single shield the anterior sternal margin of which is 150μ wide and deeply concave, sternal setae I are long, 70μ and 70μ apart and lie in the antero-lateral angles, sternal setae II and III are minute, II 33μ from I and 33μ apart, III 61μ from II and close to the genital orifice and 84μ apart, between the bases of setae I are a pair of round pores 33μ apart and a second pair of pores (lyriform) lie slightly posterior of setae II and 61μ apart, while a third pair of pores also lyriform are about in line with setae III and 145μ apart; the genital orifice is between coxae II and III, 94μ wide by 47μ long, and around the posterior half on each side is a series of 8-9 pores; the anal shield is of the same shape and dimensions as in the female.

Gnathosoma and *Legs* as in female.

Neofedrizzia canestrinii sp. nov.

Text fig. 8 A-I

Types—Holotype female, allotype male, nine paratype females and four paratype males from a Passalid *Aulacocyclus edentulus* Mcl. from Hinchinbrook Island, N. Queensland, 9th Sept., 1956 (G. F. Bornemissza).

Other material—1 male from *A. edentulus* Mcl., Hampton, Queensland, 3rd October, 1956 (G.F.B.); 2 males from Tambourine, ? date (A. M. Lea); 1 male on Passalid, Atherton Tableland, Queensland, 28th March, 1945 (D. J. Collis); 1 male from *A. edentulus*, Wilson's Downfall near Tenterfield, New South Wales, 8th Oct., 1956 (G.F.B.).

Description–Holotype female–With the generic facies, but a rather small roundish species. Length of idiosoma 812μ, width 638μ.

Dorsum–Dorsal shield entire, covering the whole body and under-lapping venter as in other species; it is smooth except for some fine longitudinal striae circumferencially, and is furnished with many round small pores or the bases of minute setae.

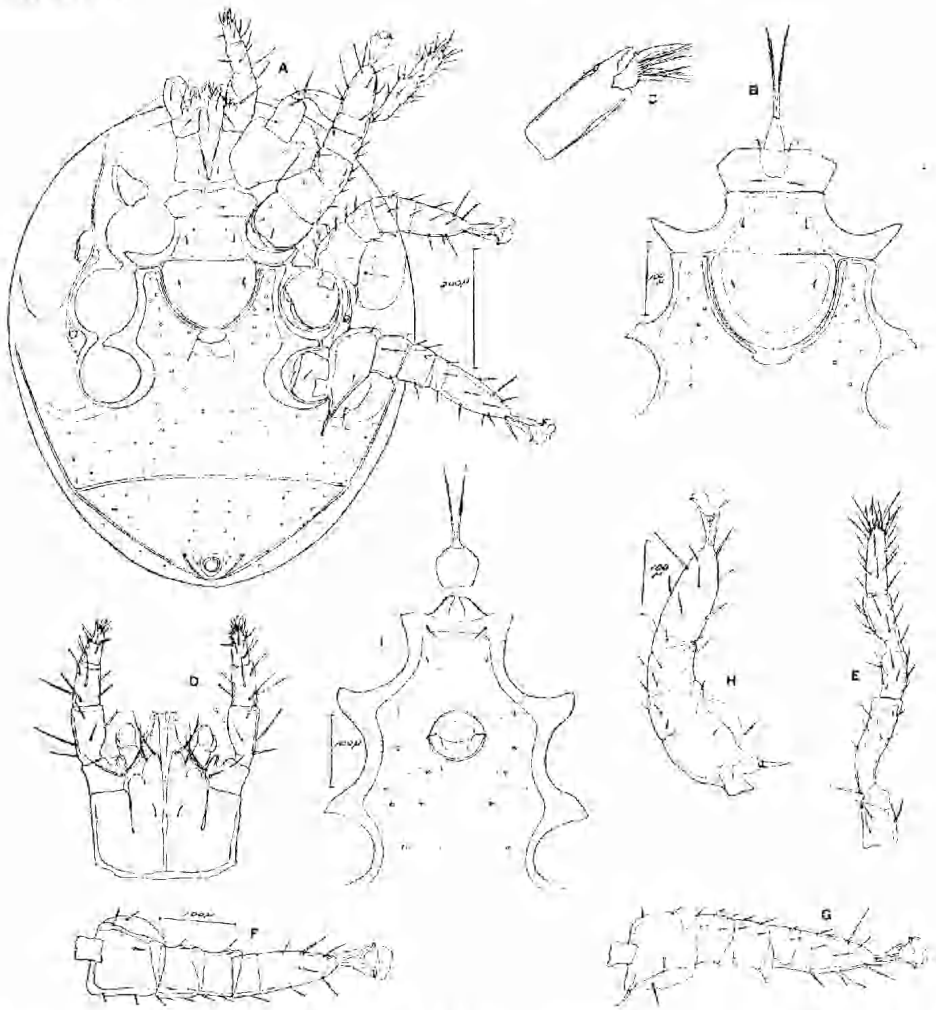

Fig. 8.—*Neofedrizzia canestrinii* sp. nov. A-H Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, chelicerae; D, gnathosoma and palpi; E, leg I; F, leg II; G, leg III; H, leg IV; I, Male tritosternum, pre-sternal processes and sternal shield.

Venter–Tritosternum with elongate base 47μ long and 25μ wide, with paired ciliated laciniae to ca. 110μ long; jugular shield as figured, crown-shaped, 132μ wide by 47μ long (deep) and the posterior margin 104μ long, with one pair of recurved setae flanking the base of the tritosternum, ca. 19μ long and 30μ apart, with one pair of lyriform pores 11μ in front of posterior margin and 36μ apart; sternal shield as figured, 104μ wide anteriorly, the sides only narrowing slightly from anterior angles, then coalescing with the endopodal shields of coxae II

contouring coxae II and then running between coxae II and III to a maximum width between apices of postero-lateral arms of 282μ, posterior margin straight medially for 142μ then sloping slightly backwards for 47μ before running obliquely forwards to the tips of the postero-lateral arms, with three pairs of setae all very short, the first pair (sternal setae II) 16μ behind the anterior margin and 44μ apart, the second and third pairs of setae (sternal setae III and IV) in a transverse row near the posterior margin, the medians 44μ apart and 33μ from the laterals, with one pair of lyriform pores 77μ apart and 16μ behind sternal setae II, length (depth) of shield 66μ; sternogynial shield as figured, wider anteriorly than it is long, 124μ by 99μ, ratio of length to width = 1·0 : 1·25, with rounded sides, which expand slightly behind anterior corners to a width of 137μ; latigynial shields strap-like, contouring sides of sternogynial and somewhat hidden under inner edges of ventral shield as in other species; mesogynial shield reduced and obscured by the inner anterior margin of the ventral shield and the bases of the latigynial shields; ventral shield large and covering most of the venter as in other species, its transverse posterior margin 400μ, with a number of round pores and minute setae as figured, the claviform processes are present beneath the shield but inconspicuous; anal shield large triangular, 400μ wide by 91μ long (deep), ratio width to length = 4·4 : 1·0, with many round pores and a few minute setae besides the paranal setae of 52μ length; the peritremal shield and peritreme as in other species.

Gnathosoma as in the type and other species of the genus.

Legs all shorter than the body, I antennaeform, 432μ long, II and III 400μ, IV 423μ.

Allotype male—Facies, shape and dimensions as in the female.

Dorsum as in female.

Venter—Tritosternum with bulbous basal part, 47μ long and 47μ wide with subapical division, and paired ciliated laciniae ca. 110μ long; pre-sternal processes as figured, blunt and stoutly horn-shaped curved inwards, each 27μ long by 16μ thick medially; sterno-ventral shield as figured, anterior margin concave and 99μ wide, genital orifice wider than long 60μ by 55μ, and situated between coxae II and III, no pores marginally around the posterior half of the opening but there is a slight bulge on each side in the mid-line; anal shield of the same shape and dimensions as in the female.

Gnathosoma and *Legs* as in the female.

Neofedrizzia cynota sp. nov.

Text fig. 9 A-I

Types—Holotype female, allotype male, one paratype female and two paratype males from *Mastochilus dilatus* Dalm. from Wilson's Downfall, near Tenterfield, New South Wales, 8th Oct., 1956 (G. F. Bornemissza). Also 2 males and 1 female from same host from Washpool Crk., near Tenterfield, 8/10/56 (G.F.B.).

Description—Holotype female—Only a moderately rounded species. Length of idiosoma 893μ, width 638μ, ratio of length to width = 1·4 : 1·0.

Dorsum—Shield covering entire body and under-lapping venter as in other species, with many small rounded pores and minute setae, surface smooth.

Venter—Tritosternum with elongate basal part 47μ long by 23μ wide, and with paired ciliated laciniae to ca. 120μ; jugular shield crown-shaped as figured, 113μ wide by 49μ long (deep), posterior margin 82μ, with a pair of recurved setae on anterior margin flanking base of tritosternum 30μ apart and 33μ long, with one pair of lyriform pores 11μ in front of posterior margin and 38μ apart; sternal shield as figured, anterior margin 82μ, sides narrowing slightly just behind

angles and then contouring coxae II to run between coxae II and III to a maximum width of the postero-lateral arms of 247μ, posterior margin straight medially for 110μ and then sloping backwards slightly for 44μ on each side before running obliquely forwards to the tips of the postero-lateral arms, with three pairs of setae and one pair of lyriform pores, the setae are all 20μ long, the anterior setae (sternal setae II) are 19μ behind the anterior margin and 44μ apart;

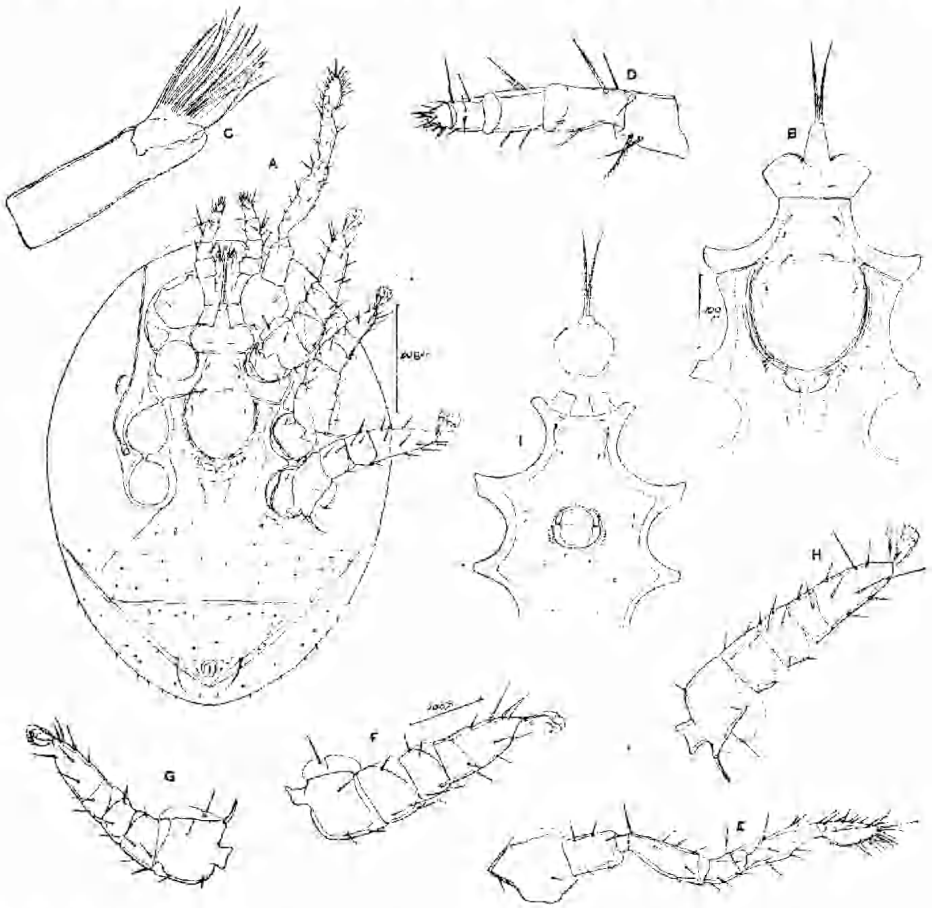

Fig. 9.—*Neofedrizzia cynota* sp. nov. A-H Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, chelicerae; D, palp; E, leg I; F, leg II; G, leg III; H, leg IV; I, Male tritosternum, pre-sternal processes and sternal shield.

sternal setae III and IV form a transverse row near the posterior margin with the medians 44μ apart and 25μ from the laterals, the pores are 60μ apart and 22μ behind setae II; sternogynial shield as figured, only a little longer 118μ than wide anteriorly, its sides widen just in line with the pores to 124μ and then converge gradually in a rounded curve to the rounded apex, the pores are 96μ apart and lie 28μ behind the anterior margin; the latigynial shields are strap-like and contour the sides of the sternogynial shield as in other species; the mesogynial shield is reduced and obscured; the ventral shield is as in other species furnished with a number of round pores and a few minute setae, its transverse posterior margin is 352μ wide; the anal shield is triangular, 352μ

wide by 160μ long (deep) giving a ratio of width to length of 2·2 : 1·0, the paranal setae are 56μ long.

Gnathosoma as in other species.

Legs—All shorter than body, I antennaeform, 464μ long, II-III 383μ, IV 406μ.

Allotype male—Of the same facies, size and dimensions as the female.

Dorsum as in female.

Venter—Tritosternum with a bulbous basal part, 66μ wide by 66μ long, and with paired ciliated laciniae ca. 120μ long; pre-sternal processes short and stumpy and apically truncate, 23μ long by 23μ wide, bent inwards; sterno-ventral shield as in other species, anterior margin concave and 112μ wide with blunt antero-lateral corners, genital orifice as figured lying between coxae III, 55μ long by 55μ wide, with a short series of pores around the posterior margin as figured, sternal setae I long 30μ and situated in the antero-lateral angles of the shield, anterior of these and behind bases of pre-sternal processes is a pair of small lyriform pores; anal shield of the same shape and dimensions as in the female.

Gnathosoma and *Legs*—As in female.

Remarks—Distinguished from other species as in the following key.

Neofedrizzia camini sp. nov.

Text fig. 10 A-K

Types—Holotype female, allotype male and one paratype of each sex from *Mastochilus dilatus* Dalm. from a rotten eucalypt log from Glen Innes, New South Wales, 9th Oct., 1956 (G. F. Bornemissza).

Other material—1 male, Upper Williams River, N.S.W., Oct., 1926 (A. M. Lea and E. W. Wilson); 1 male in ? moss and lichen, Waratah, Tasmania (no date); 1 male on a beetle, Mt. Glorious, Queensland, 6th Feb., 1951 (E. H. Derrick).

Description—Holotype female—A rather oval elongate species, of the generic facies. Length of idiosoma 1160μ, width 770μ, ratio length to width = 1·5 : 1·0.

Dorsum—Dorsal shield entire, covering the whole body and under-lapping venter as on other species. Surface smooth with numerous small pores and some minute setae.

Venter—Tritosternum with elongate basal part 66μ long by 33μ wide and a pair of ciliated laciniae ca. 120μ long; jugular shield crown-shaped as figured, 150μ wide by 66μ deep, posterior margin 112μ wide, with a pair of fine recurved setae flanking base of tritosternum 55μ long and their bases 30μ apart, with one pair of lyriform pores 47μ apart and 16μ in front of posterior margin; sternal shield as figured, anterior margin 112μ, sides contouring coxae II and running between coxae II and III to form the postero-lateral arms with a width of 305μ, the posterior margin 258μ is straight medially for 144μ and laterally slopes slightly backwards for 57μ on each side before running obliquely forwards to the tips of the postero-lateral arms, with three pairs of setae and one pair of lyriform pores, the setae are all fine and ca. 27μ long, the first pair (sternal setae II) lie in the antero-lateral angles 22μ behind the anterior margin and 47μ apart, the others form a transverse row near the posterior margins with the medians 60μ apart and 30μ from the laterals, the pores are 91μ apart and 30μ behind setae II; sternogynial shield as figured, slightly longer than wide on anterior margin 144μ by 132μ, the sides expand to a width of 151μ in line with the pores and then curve more or less evenly to form a rounded shape, the pores lie 41μ behind the anterior margin and 110μ apart; latigynial shields narrow and strap-like contouring the sternogynial shield as in other species; the meso-

gynial shield is reduced and obscured; the ventral shield is large and coalesced with other shields as in other species, its transverse posterior margin is 510μ wide, the surface shows many small pores and some fine minute setae; the anal shield is large and triangular, 510μ wide by 244μ long (deep), giving a ratio of width to length of 2·09 : 1·0, the paranal setae are 40μ long.

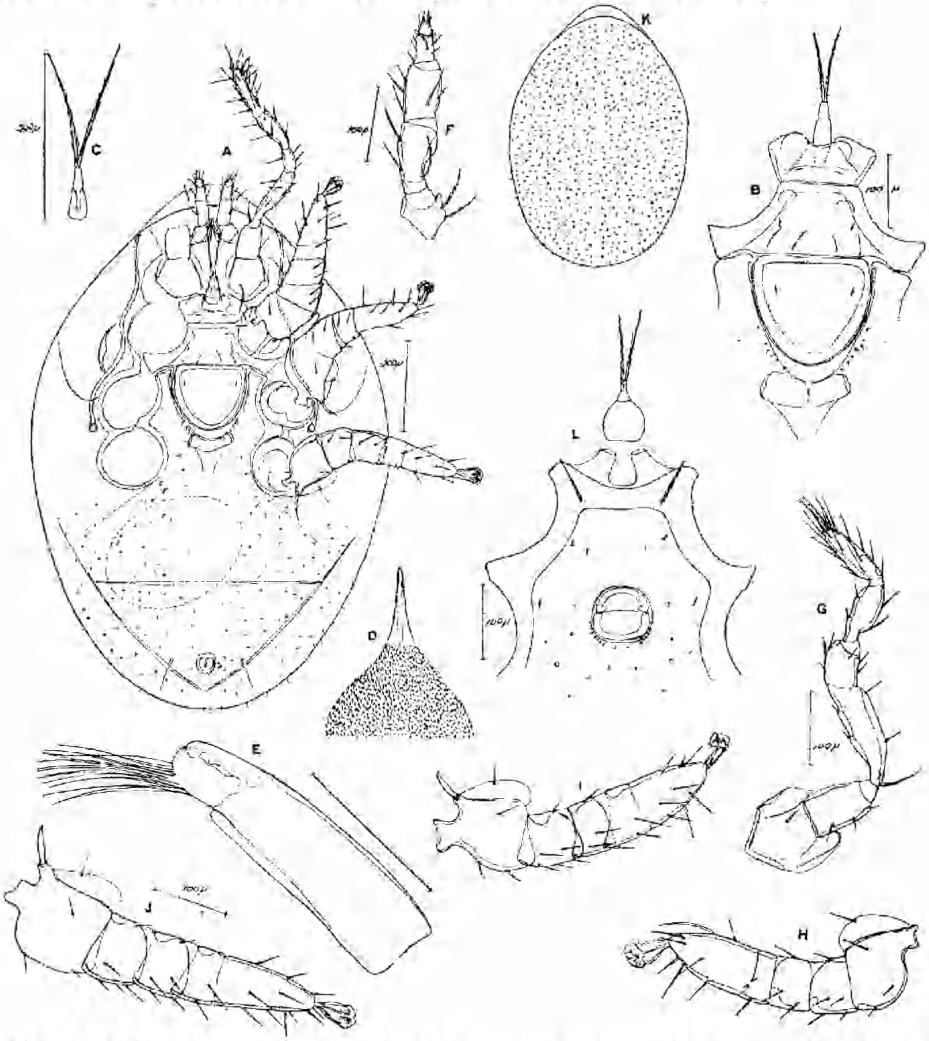

Fig. 10.—*Neofedrizzia camini* sp. nov. A-K, Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial, lateral shields and claviform processes enlarged; C, tritosternum; D, tectum; E, mandible and chelicerae; F, palp; G, leg I; H, leg II; I, leg III; J, leg IV; K, dorsal shield; L, Male tritosternum, pre-sternal processes and sternal shield.

Gnathosoma—As in other species.

Legs—All shorter than body, I antennaeform 590μ long, II and III 464μ, IV 520μ.

Allotype male—Of the same shape and dimensions as in the female.

Dorsum—As in female.

Venter—Tritosternum with bulbous basal part 70μ long by 70μ wide, and a pair of ciliated laciniae ca. 120μ long; pre-sternal processes short and stumpy

curved inwards and with truncate apices, 42μ long by 25μ wide; sterno-ventral shield as in other species, anterior margin concave 140μ wide with blunt truncate antero-lateral corners, genital orifice lying between coxae III as figured 66μ long by 66μ wide with a series of seven or eight pores around the posterior half, sternal setae I 38μ long and situated in the antero-lateral angles of the shield, other pores and small setae are present, some of which probably represent sternal setae II-IV and their respective pores; anal shield of the same shape and dimensions as in the female.

Gnathosoma and *Legs*—As in the female.

Remarks—Distinguished from other species as in the following key. The species is named after Dr. J. H. Camin who has contributed much to the study of the comparative morphology of the Mesostigmata.

Neofedrizzia gorirossiae sp. nov.

Text fig. 11 A-L

Types—Holotype female, allotype male and seven paratype females from *Mastochilus dilatus* Dalm. from rotting eucalypt log, Hampton, Queensland, 8th November, 1956 (C. F. Bornemissza).

Description—Holotype female—A moderately large oval species widest in line of coxae III and then tapering somewhat before becoming rounded posteriorly from line of anterior margin of anal shield. Length of idiosoma 1020μ, width 696μ; giving a ratio of length to width of 1·46 : 1·0.

Dorsum—Dorsal shield covering all the body and under-lapping venter as in other species, with many small round pores, and some minute setae.

Venter—Tritosternum with elongate basal part, 52μ long by 28μ wide, with a pair of ciliated laciniae to 140μ long; jugular shield crown-shaped as figured 132μ wide by 47μ long (deep), posterior margin 99μ, with a pair of anterior recurved setae ca. 37μ long flanking the base of the tritosternum and their bases 30μ apart, and 10μ in front of posterior margin; sternal shield as figured, anterior margin 99μ wide, sides contouring coxae III and running between coxae II and III to form the antero-lateral corners of the postero-lateral arms with a maximum width of 275μ, the posterior margin is straight medially for a width of 124μ then bends lightly backwards for 50μ on each side before running obliquely forwards to join the tips of the postero-lateral arms, with three pairs of setae and one pair of lyriform pores, the anterior pair of setae (sternal setae II) are ca. 25μ long, 55μ apart and lie 20μ behind the anterior margin, the other two pairs of setae (sternal setae III and IV) form a posterior transverse row with the medians 47μ apart and 23μ from the laterals, these setae are also ca. 25μ long, the pores are 70μ apart and 23μ behind sternal setae II; sternogynial shield as figured, anterior margin 108μ, length 131μ, the sides expand slightly to a width of 131μ in line of the pores to curve and converge to a broadly rounded apex, with one pair of lyriform pores 103μ apart and 33μ behind anterior margin; latigynial shields strap-like and contouring sides of sternogynial shields as in other species; mesogynial shield reduced and obscured; ventral shield large, occupying most of the venter and coalesced with all other shields except the anal, its posterior margin is transverse, 404μ wide and separated from the anal by a suture, it carries a number of pores and a few minute setae; anal shield large, triangular, 404μ wide anteriorly and 202μ long (deep) giving a ratio of width to length of 2·0 : 1·0, it is furnished with a number of pores and some fine minute setae, as well as a pair of paranal setae 56μ long.

Gnathosoma—As in other species.

Legs—All shorter than body, I antennaeform, 522μ long, II and III 430μ, IV 464μ.

Allotype male—Of the same shape and dimensions as in the female.

Dorsum—As in the female.

Venter—Tritosternum with bulbous base 85μ wide and 70μ long, with a pair of ciliated laciniae 140μ long; pre-sternal processes as figured, curved in-

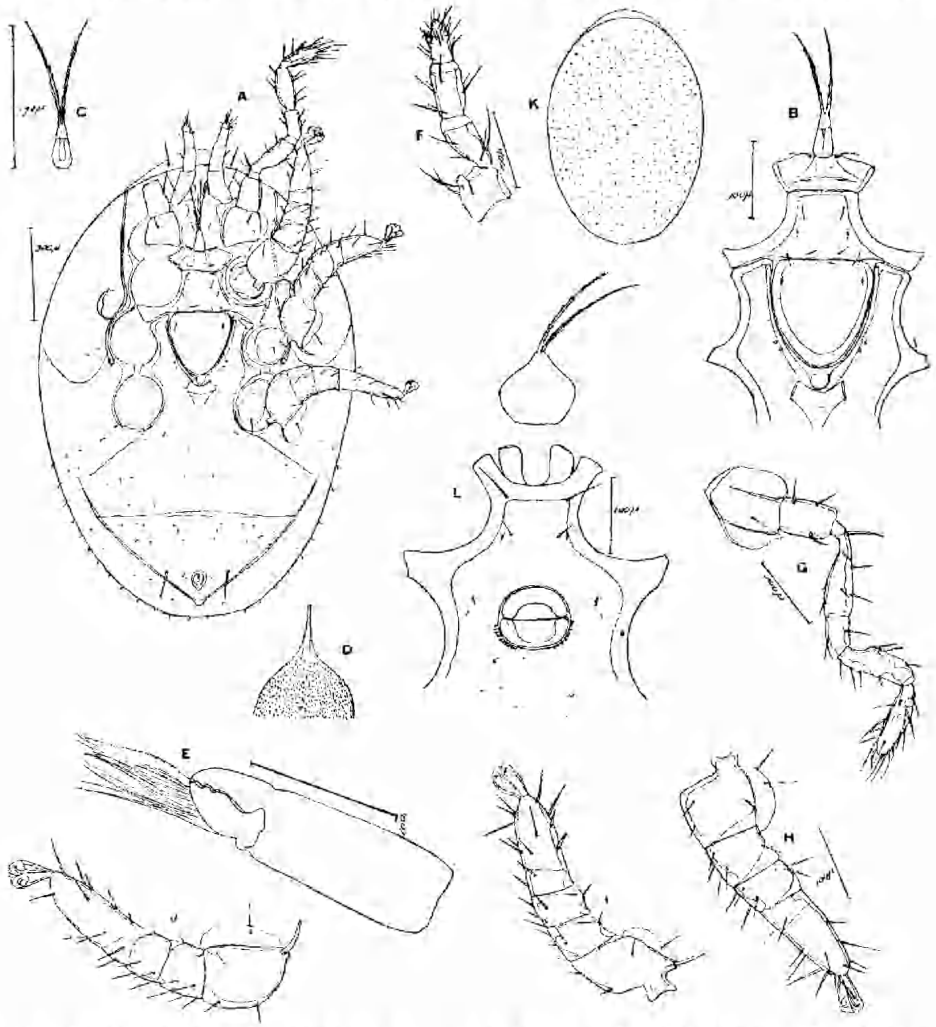

Fig. 11.—*Neofedrizzia gorirossiae* sp. nov. A-K, Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, tritosternum; D, tectum; E, mandible and chelicerae; F, palp; G, leg I; H, leg II; I, leg III; J, leg IV; K, dorsal shield; L, Male tritosternum, pre-sternal processes and sternal shield.

wards, 47μ long by 23μ wide and with parallel sides and truncate apex; sterno-ventral shield as in other species, anterior margin 136μ wide, deeply and widely excavated for the pre-sternal processes and base of tritosternum, sternal setae I in antero-lateral angles and 47μ long, antero-lateral angles of shield blunt, sternal setae II also moderately long ca. 23μ and 52μ apart and 33μ behind setae I in line with a pair of small lyriform pores 70μ apart, 70μ behind these is a pair of

larger lyriform pores 132μ apart, otherwise a few round pores and several minute setae, the genital orifice is 70μ wide by 66μ long and lies mainly between coxae III, the posterior half is margined by a series of about ten pores on each side; the anal shield is as in the female.

Gnathosoma and *Legs*—As in the female.

Remarks—This species can be separated as in the key.

It is named in honour of Dr. Flora Gorirossi, joint author with Dr. Camin of their valuable contributions on the comparative morphology of the Mesostigmata.

Neofedrizzia tragardhi sp. nov.

Text fig. 12 A-K

Types—Holotype female, allotype male, nine paratype females and five paratype males from *Mastochilus dilatus* Dalm. from a eucalyptus log, at Washpool Creek, near Tenterfield, New South Wales, 8th Oct., 1956 (G. F. Bornemissza).

Description—Holotype female—A large elongate oval species widest anteriorly of the middle and in line with coxae III. Length of idiosoma 1369μ, greatest width 905μ, width across anterior margin of anal shield 754μ, ratio of length to width = 1·51 : 1·0.

Dorsum—Shield covering entire body and under-lapping on to venter as in other species, furnished with numerous small round pores and some obscure minute setae, on the hyaline anterior portion with a pair of vertical setae 47μ long and 94μ apart.

Venter—Tritosternum with elongate basal part 56μ long by 32μ wide, and a pair of ciliated laciniae ca. 160μ long; jugular shield as figured, crown-shaped, 164μ wide by 56μ long (deep) and the posterior margin 127μ, with a pair of very long 90μ setae anteriorly and flanking base of tritosternum with their bases 38μ apart, with a pair of lyriform pores 10μ in front of posterior margin and 52μ apart; sternal shield as figured, anterior margin straight, 127μ wide, sides at first slightly narrowing then contouring coxae II to extend between coxae II and III to form the postero-lateral arms with a width of 348μ, posterior margin straight medially for 170μ then sloping backwards for 60μ on each side before running obliquely forwards to the tips of the postero-lateral arms, with three pairs of setae and one pair of lyriform pores, the first pair of setae (sternal setae II) are very long and slender, 23μ behind anterior margin, 80μ long and 70μ apart; the other two pairs (sternal setae III and IV) form a transverse row near the posterior margin, they are only about half the length of setae II 33μ with the medians 75μ apart and 23μ from the laterals, the pores are 33μ behind setae II and 99μ apart; sternogynial shield as figured, anterior margin transverse and 141μ wide, the sides expand to a width of 152μ in line of the lyriform pores, then curve and converge to the rounded apex, the length of the shield is 146μ, the one pair of pores is 38μ behind the anterior margin and 113μ apart; the latigynial shields are strap-like and contour the sternogynial shield as in other species; the mesogynial shield is reduced and obscured; the ventral shield is large, coalesced with the other shields except the anal and occupies most of the venter, its posterior margin is transverse and 615μ wide, it is furnished with many small round pores and a few minute setae; the anal shield is large, with the anterior margin 615μ wide and its length (depth) 302μ, giving a ratio of length to depth of 2·04 : 1·0; the paranal setae are 85μ long.

Gnathosoma as in the other species.

Legs—All shorter than body, I antennaeform, 638μ long, II and III 580μ, IV 626μ.

Allotype male—Similar in shape and size to the female.

Dorsum as in female.

Venter—Tritosternum with bulbous base 70μ wide by 61μ long, and paired ciliated laciniae 160μ long; pre-sternal appendages short and stumpy, 33μ long by 19μ wide with truncate apex and turning inwards towards one another; sterno-ventral shield as in other species; anterior margin deeply concave and 160μ wide, sternal setae I strong in the blunt antero-lateral angles and 42μ long, 56μ behind

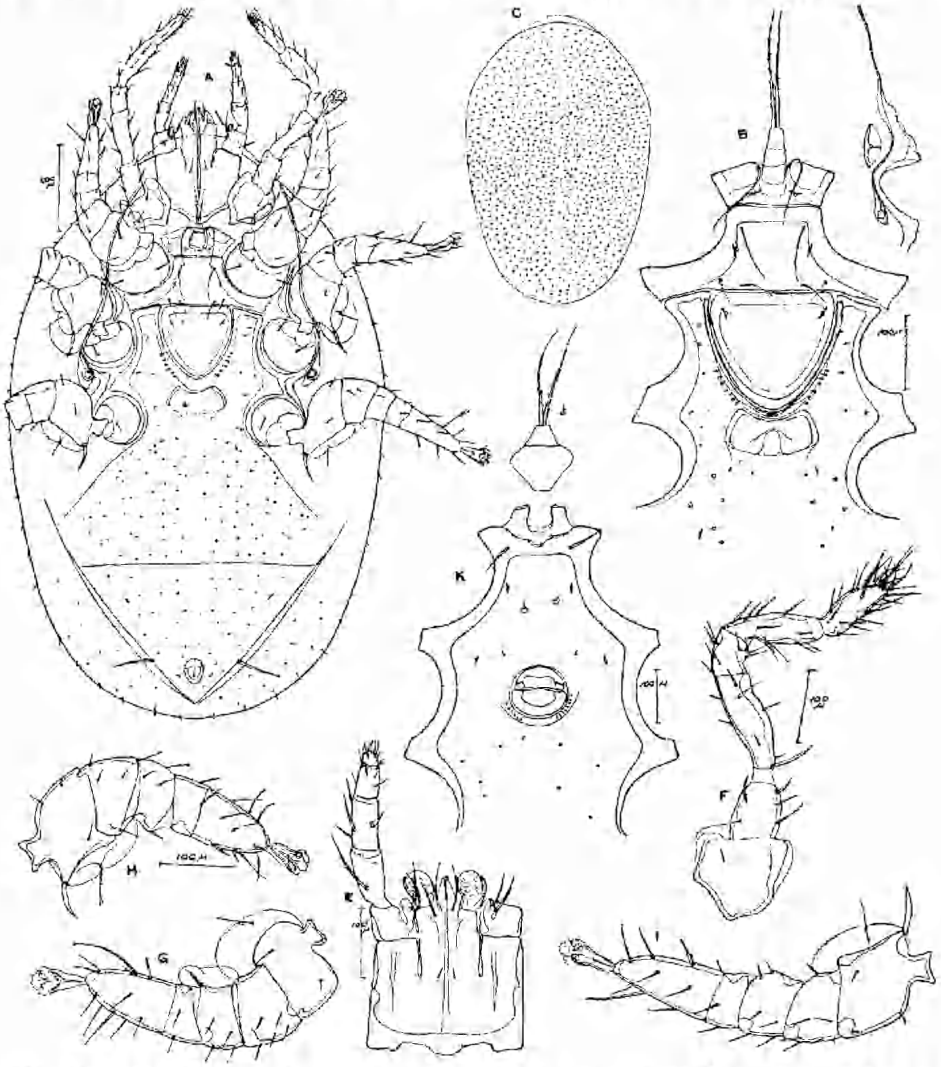

Fig. 12.—*Neofedrizzia tragardhi* sp. nov. A-I, Female: A, ventral view: B, tritosternum, jugular, sternal, sternogynial and lateral shields and claviform processes enlarged; C, dorsal shield; D, atrium of duct between coxae II and III; E, gnathosoma and palp; F, leg I; G, leg II; H, leg III; I, leg IV; J-K, Male: J, tritosternum; K, pre-sternal processes and sternal shield.

these and 85μ apart is a pair of small lyriform pores, while 94μ behind these and 164μ apart is a pair of larger lyriform pores, there are also other indistinct pores and minute setae, the genital orifice is 70μ long by 66μ wide and lies be-

tween coxae III, its basal half has a series of about eight pores on each side; the anal shield is as in the female.

Remarks—Other specimens are 10 females and 3 males from *Mastochilus dilatus* Dalm. from Wilson's Downfall, New South Wales, 8th Oct., 1956 (G. F. Bornemissza); 3 female and 4 males on a Passalid in rain forest at Eubenangee, near Innisfail, Queensland, 11th Dec., 1945 (J. C. Brooks).

This species is remarkable for the long jugular and sternal setae and can be separated as in the key. It is dedicated to the noted Acarologist, the late Prof. I. Trägårdh, who laid the bases for the modern study of the comparative morphology of the Mesostigmata.

Neofedrizzia vidua sp. nov.

Text fig. 13 A-K

Types—Holotype female, allotype male, one paratype female and three paratype males from a beetle from Mt. Glorious, Queensland, 6th February, 1957 (E. H. Derrick).

Description—Holotype female—A large and almost round species of the general facies of the genus. Length of idiosoma 1392μ, width 1020μ, giving a ratio of length to width of 1·36 : 1·0.

Dorsum—As in other species with the shield covering the whole dorsum and under-lapping ventrally as in other species, with numerous small round pores and perhaps a few minute setae, laterally running backwards and outwards beneath the cuticle can be seen in this (and in some of the other species) an irregular series of larger round discs which might be pores but do not open to the surface.

Venter—Tritosternum with elongate basal part, 70μ long by 33μ wide, with a pair of ciliated laciniae 150μ long; jugular shield crown-shaped, 174μ wide by 70μ long (deep) and 131μ wide on the posterior margin, with a pair of short recurved setae 32μ long flanking the tritostomal base on the anterior margin, with one pair of lyriform pores 19μ in front of posterior margin and 52μ apart; sternal shield as figured, anterior margin 131μ wide, length of shield 117μ, sides contouring coxae II then running between coxae II and III to form the postero-lateral arms with a width of 376μ, posterior margin medially transverse for 180μ then sloping backwards lightly for 75μ on each side before running obliquely forward to the tips of the postero-lateral arms of the shield, with three pairs of very short ca. 10-12μ setae and one pair of lyriform pores, the anterior setae (sternal setae II) are 28μ from the anterior margin and 56μ apart, the other two pairs form a transverse row near the posterior margin with the medians 60μ apart and 35μ from the laterals, the pores are 36μ from setae II and 103μ apart; sternogynial shield as figured, as wide anteriorly as long 146μ, the sides widen out in line with the pores to a width of 169μ and then converge in a fairly even curve to the posterior apex, with the lyriform pores 37μ from the anterior margin and 117μ apart; mesogynial shield reduced and obscured; latigynial shields strap-like and contouring sternogynial shield as in other species; ventral shield large occupying most of the venter and coalesced with other shields except the anal, with a transverse posterior margin 696μ wide, with a number of rounded pores and a few minute setae; anal shield large, triangular, 696μ wide on the anterior transverse margin and 336μ long (deep) giving a ratio of width to length of 2·07 : 1·0, paranal setae 85μ long.

Gnathosoma as in other species.

Legs—As in other species, I 660μ, II and III 522μ, IV 600μ.

Allotype male—Of the same shape and dimensions as the female.

Dorsum as in the female.

Venter—Tritosternum with bulbous basal part 70μ long by 75μ, and a pair of ciliated laciniae 150μ long; pre-sternal processes short and stumpy, turned in towards one another, 47μ long and 23μ wide with truncate apex; sterno-

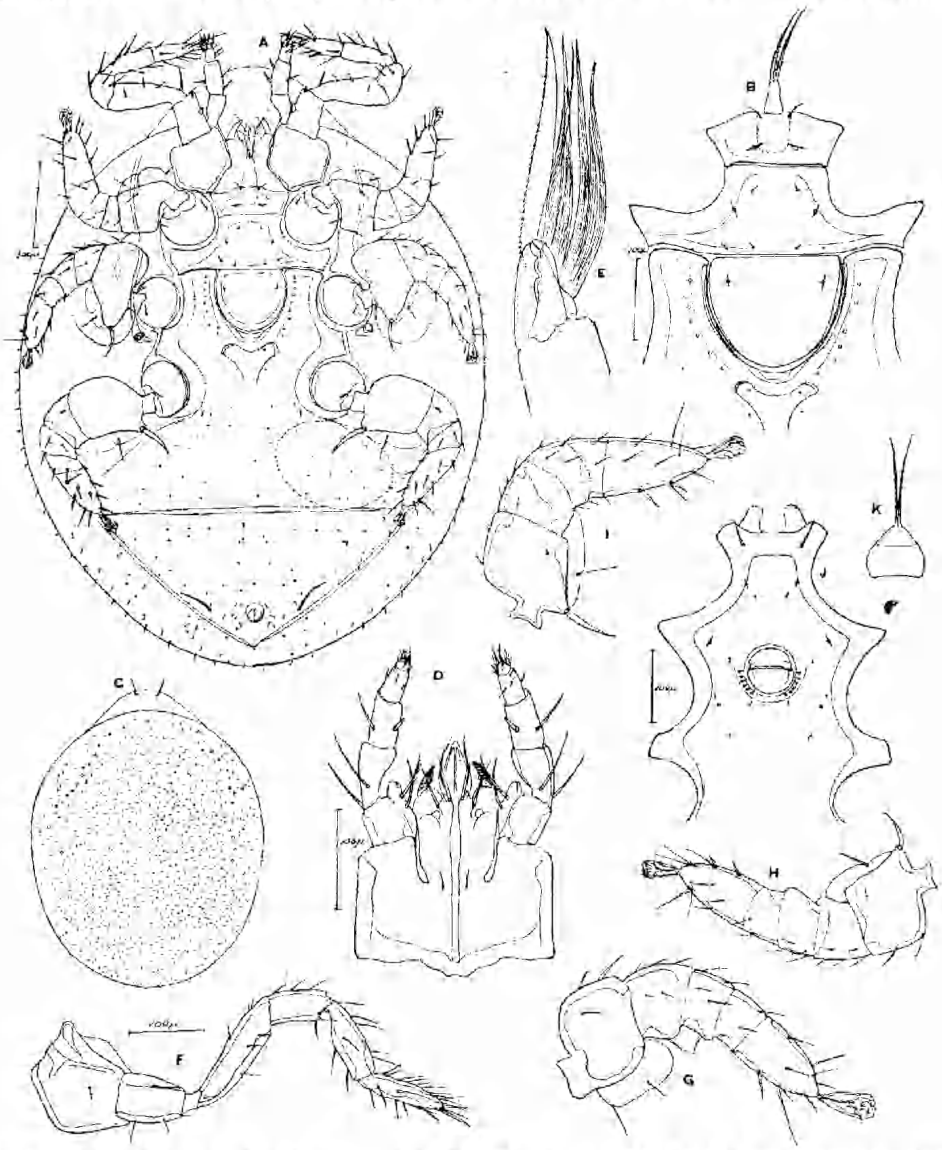

Fig. 13.—*Neofedrizzia vidua* sp. nov. A-I, Female: A, ventral view; B, tritosternum, sternal, sternogynial and latigynial shields and claviform processes enlarged; C, dorsal shield; D, gnathosoma and palpi; E, chelicerae; F, leg I; G, leg II; H, leg III; I, leg IV; J-K, Male: J, pre-sternal processes and sternal shield; K, tritosternum.

ventral shield as in other species, anterior margin concave, 131μ wide, with blunt obliquely truncate antero-lateral angles, sternal setae I 50μ long, a pair of small lyriform pores 56μ behind setae I and 90μ apart, another pair of long lyriform

pores 90μ behind the last and 207μ apart, several other rounded pores and minute setae, genital orifice between coxae II and III and 94μ wide by 75μ long with a series of six pores on each side around the basal half; anal shield as in the female with some pores and minute setae as well as the pair of paranal setae 85μ long, on the under-lap of the dorsal shield around the anal shield are a number of small setae.

Gnathosoma and *Legs*—As in female.

Neofedrizzia brooksi sp. nov.

Text fig. 14 A-J

Types—Holotype male, allotype female and one paratype male from a Passalid, in rain forest, Eubanangee, near Innisfail, Queensland, 11th December, 1945 (J. C. Brooks).

Description—Female allotype—A moderately large species, with the general facies of the family, but the sides medially rather straight than rounded and slightly tapering backwards. Length of idiosoma 1276μ, width 870μ, ratio length to width = 1·47 : 1·0.

Dorsum—Shield covering all the dorsum, and under-lapping the venter anteriorly to form the front margin of the camerostome, laterally confluent or coalesced with the large ventral shield and under-lapping from coxae IV to the end, the margins contouring the edges of the ventral and anal shields; in front of camerostome with a pair of setae 56μ long and ciliated.

Venter—Tritosternum with base 70μ long and subdivided, with paired ciliated laciniae 140μ long; jugular shield united medially to form a crown-like single shield, 164μ wide by 56μ long, posterior margin 132μ and straight, with a pair of recurved setae 47μ long and 38μ apart on the anterior margin flanking the base of tritosternum, with a pair of lyriform pores subposteriorly; sternal shield coalesced with endopodal shields of coxae II, 140μ wide anteriorly, scarcely narrowing to mid-line of coxae II and contouring coxae II to expand to a width of 402μ for the postero-lateral arms between coxae II and III, posterior margin straight medially for about 228μ, and then running slightly backwards for about 95μ on each side after which it turns sharply forwards to the extreme tips of the postero-lateral arms, with three pairs of setae to 56μ long and ? 2 pairs of pores, the anterior setae are in the antero-lateral corners and 70μ apart, the other two pairs (sternal setae III and IV) form a transverse posterior row in which the median pair are ca. 60μ apart and ca. 30μ from the laterals; sternogynial shield as figured, anterior margin straight and 132μ wide, sides expanding slightly to 141μ immediately behind anterior corners, then evenly rounded to apex, length of shield 126μ, with one pair of lyriform pores in antero-lateral angles; latigynial shields strap-like, widening a little in apical third, and contouring sides of sternogynial shield; mesogynial shield small, behind it are faint indications of broad vaginal sclerites; ventral shield coalesced with other shields, except anal, as in other species, posterior margin straight, transverse and 520μ wide; anal shield large, triangular, 520μ wide by 250μ long, ratio width to length 2·08 : 1·0; paranal setae missing.

Gnathosoma—Hypostome, labial cornicles, chelicerae and palpi as in other species of the genus.

Legs—As in other species, I 475μ, II 420μ, III 420μ, IV 475μ.

Male holotype—With the general facies and size of the female.

Dorsum—As in female.

Venter—Tritosternum with a bulbous basal part 98μ long by 75μ wide and subdivided near apex, with paired ciliated laciniae 140μ long; no jugular shield;

in front of anterior sternal margin with a pair of anteriorly directed processes 47μ long and 24μ wide turned outwards and apparently fixed basally; sternal, endopodal, ventral and exopodal shields coalesced, anterior margin medially concave and 164μ wide, the anterior pair of setae (sternal setae 1) are long 47μ and 70μ apart, sternal setae II and III are minute, II 56μ from I and 47μ apart, III 47μ from II and 60μ apart; setae IV are in line with the middle of

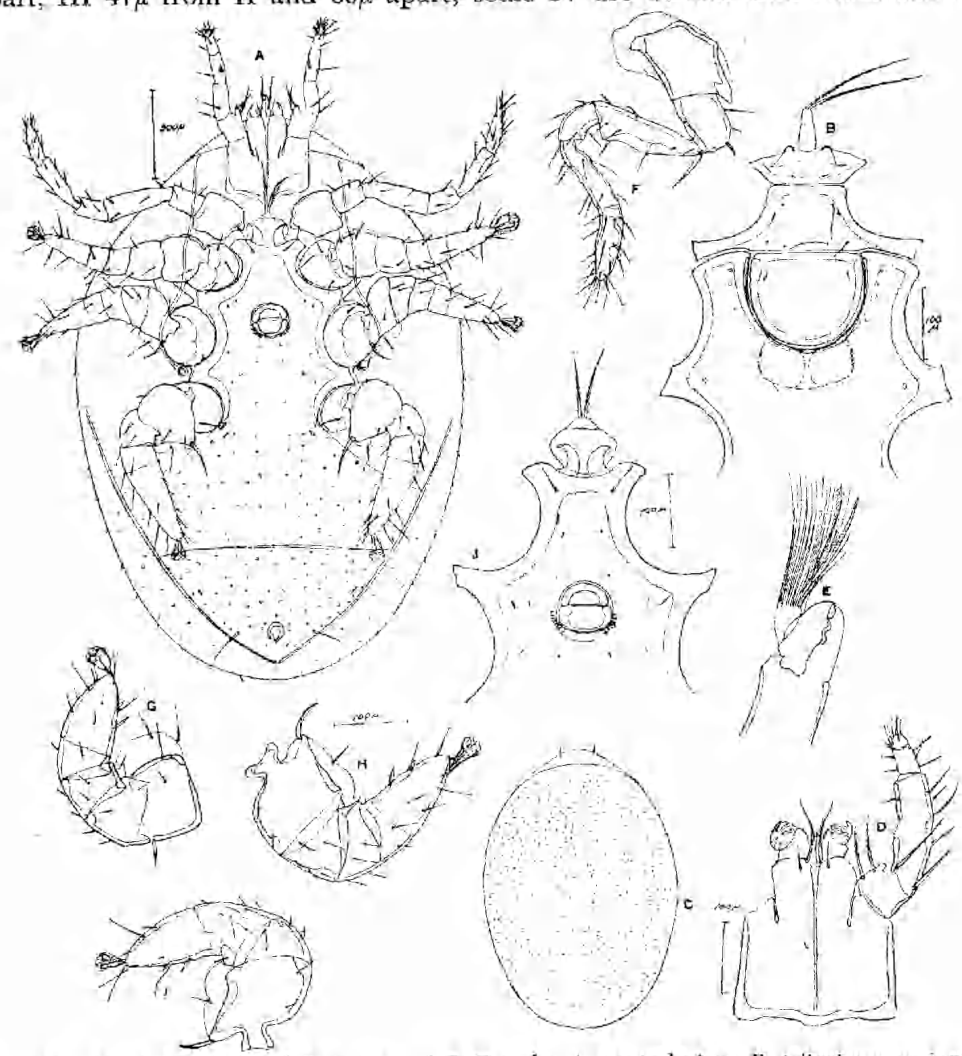

Fig. 14.—*Neofedrizzia brooksi* sp. nov. A-I, Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields and claviform processes enlarged; C, dorsal shield; D, gnathosoma and palp; E, chelicerae; F, leg I; G, leg II; H, leg III; I, leg IV; J, Male tritosternum, pre-sternal processes and sternal shield.

the genital orifice and 160μ apart, with their attendant pores 188μ apart; the genital orifice is rather small, situated between coxae II and coxae III, 10μ wide by 38μ long, on the postero-lateral corners are a series of tubercles; anal shield as in female, 520μ wide and 250μ long, with numerous pores and a pair of long paranal setae.

Gnathosoma and *Legs*—As in female.

Neofedrizzia scutata sp. nov.

Text fig. 15 A-J

Types—Holotype and 2 paratype females from a Passalid at Bulolo, New Guinea, Sept. 3rd, 1954 (coll. H.W.).

Description—Female holotype—A large species of the general facies of other members of the genus. Length of idiosoma 1276μ, width 963μ, ratio length to width 1·32 : 1·0.

Dorsum—Shield entire and under-lapping venter as in other species apparently without setae or pores.

Venter—Tritosternum with moderate thick basal part and paired ciliated laciniae; jugular shields coalesced medially to form a single crown-like transverse shield 146μ wide by 52μ long, with almost straight posterior margin, and the anterior margin indented medially to accommodate base of tritosternum, with a pair of long setae anteriorly and 47μ apart, and a pair of lyriform pores more posterior; sternal shield anteriorly slightly wider than posterior margin of jugular shield 117μ, sides narrowing between coxae II to 103μ, and then curving round coxae II to form the postero-lateral arms with a width of 329μ between coxae II and III, length of shield 113μ, posterior margin straight for 126μ, then produced posteriorly for a width of 27μ on each side, after which it runs obliquely forwards to the tips of the postero-lateral arms, furnished with three pairs of long 33μ setae and ? two pairs of lyriform pores, the anterior pair of setae (sternal setae II) are about in line with the middle of coxae II, the other two pairs (sternal setae III and IV) form a transverse row near the posterior margin, the median pair 52μ apart and 42μ from each lateral seta, the anterior pair of pores could not be seen; sternogynial shield as figured like an inverted cone with only lightly curved sides, 211μ wide anteriorly and 160μ long, with a pair of pores in the antero-lateral corners; the mesogynial shield reduced as figured; latigynial shields strap-like and contouring sides of sternogynial shield and rather hidden under the edges of the surrounding anterior arms of the ventral shield; ventral shield large and coalesced with other shields as in other species, the posterior straight transverse margin is 784μ wide and from its lateral ends a fine diagonal line runs inwards and forwards to the inside of acetabula IV; the anal shield is separated from the ventral by a transverse suture 784μ wide anteriorly and 267μ long, it carries a pair of setae submedianly and subanteriorly and a pair of longer paranal setae, as well as a number of pores.

Gnathosoma—Mouthparts, palpi, chelicerae and hypostome as in other species; labial cornicles two-segmented with apical segment and blunt hyaline thumb-like body with a small adpressed claw-like process subapically.

Legs—I 6-segmented, antennaeform, fairly slender and angulated, tarsus without caruncle or claws, II-IV stouter, IV with curved spine at posterior angle, all tarsi with short pretarsus, caruncle and indistinct claws, I 600μ long, II 464μ, III 523μ, IV 578μ.

Male—Unknown.

Remarks—This species is described from the type specimens only. It is by far the largest of the species at present known and differs from the others as indicated in the key.

Neofedrizzia laevis (Canest., 1884)

Fedrizzia laevis Canestrini, 1884. Acari dell'Australia. Atti Ist. Veneto, 2 Ser. VI, pp. 708-709, Tav. VIII, fig. 3.

This species is only known from a single male found in "a collection of insects" from Queensland made by the late Prof. Pulle of the University of Padova.

A free translation of Canestrini's description is as follows:

"Length 0·91 mm, width 0·66 mm. Known from a single specimen of the male only. It differs from the male of *F. grossipes* in that the genital aperture is placed somewhat further back between the third pair of legs; it is semicircular or almost circular. Also it differs in the epistome (tectum) which is in the form of a dentate spine approaching that of the Uropodids. The shape of the body is oval, posteriorly rounded. All the animal appears smooth; under a high magnification (Zeiss. Ocul. 2, Obj. D) it has very short setae in contrast to the two longer ones found on the anal shield on each side of the anal aperture."

From the above the ratio of the length to width of the idiosoma is 1·38 : 1·0. Interpolating from Canestrini's figure of the ventral surface, the anal shield has a width of 425μ and a length of 190μ giving a ratio of width to length of 2·23 : 1·0. The femur of leg IV is shown as short and broad, but the laminae and posterior strong curved spine are not observable.

He notes and shows in his figure that the genital orifice is placed far back between the third or even the third and fourth coxae. It is not clear in his figure whether there is a jugular shield present or not although it could quite easily be absent.

This would seem to be a valid species of *Neofedrizzia*, differing significantly in the position of the male genital orifice. In none of the many specimens examined during the course of this study have any males showing such a backward position of the genital orifice been seen.

Neofedrizzia vitzthumi (Ouds., 1927)

Toxopeusia vitzthumi Ouds., 1927. Ent. Ber., 7, 156, p. 228; 1928. Fauna Buruana, Acari, in Treubia., 7, suppl. 2, pp. 66-70, figs. 82-98.

This species was very fully described and figured from a single specimen (or ? specimens) from "in fungi", Wai Eno bis Wai Temun, Buru, at 700-1000m.; 3rd Nov., 1922 (coll. L. J. Toxopeus). Only the female sex was found.

Although placed by Oudemans along with *strandi* in his genus *Toxopeusia* (*Fedrizzia*) it is readily seen from his drawings (1928) in spite of the lack of the male, that this species belongs to the new genus *Neofedrizzia* on the following features: (1) the femora of leg IV is short and stout, with laminae, and probably with the posterior curved spine although this is not obvious in the figure, (2) the sternogynial shield has the antero-lateral corners curved inwards, and (3) only one of the two long setae on the first free segment of the palp is ciliated and that shortly so.

According to the description, the idiosoma is 745μ long by 570μ wide giving a ratio of length to width of 1·3 : 1·0; interpolating from Oudeman's figures the anal shield is 409μ wide by 145μ or a ratio of width to length of 2·42 : 1·0; the sternogynial shield has the antero-lateral corners rounded inwardly so that the widest part is slightly behind the anterior margin and is 92μ, the anterior margin is 80μ, the sides are straight and parallel and the posterior rounded, it is 109μ long, or a ratio of anterior width to length of 0·73 : 1·0.

The species is otherwise quite distinct from the other species known from Australia and New Guinea as described in the present paper, and can be distinguished as in the key.

Remarks—Of the above species of *Neofedrizzia* it seems likely that *N. laevis* (Canest.) on the more posterior position of the genital orifice of the male, will ultimately require a new genus, but in the absence of the female it seems better

at present to retain it in *Neofedrizzia*. *Neofedrizzia scutata* sp. nov. is also an anomalous species within the genus. Apart from the unique dorsal scute, it is intermediate between *Fedrizzia* and *Neofedrizzia* in the shape of the sterno-

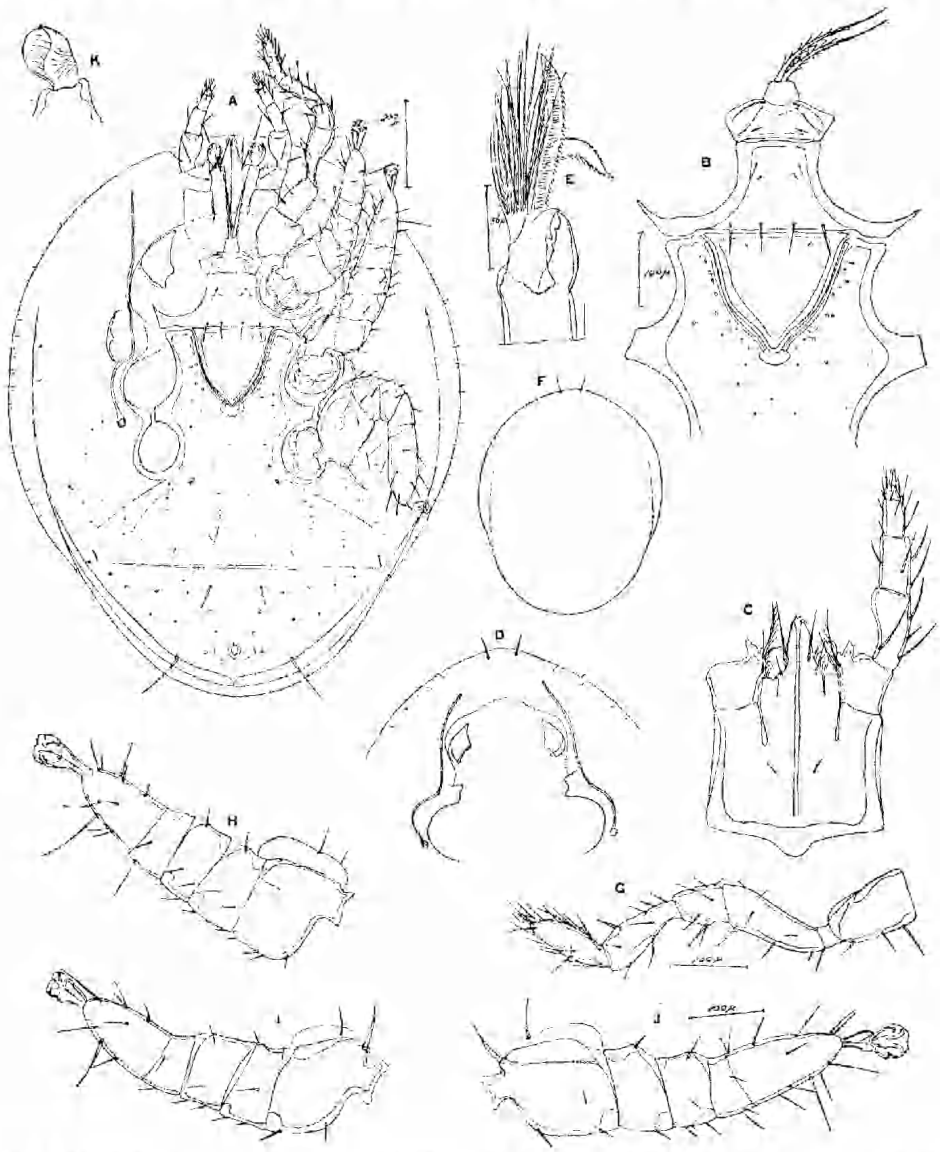

Fig. 15.—*Neofedrizzia scutata* sp. nov. A-K, Female: A, ventral view; B, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; C, gnathosoma and palp; D, camerostome showing axillar plates; E, chelicerae; F, dorsum; G, leg I; H, leg II; I, leg III; J, leg IV; K, labial cornicle.

gynial shield, which has the antero-lateral angles outwardly produced as in *Fedrizzia* and not evenly rounded as in all other species of *Neofedrizzia*. As our knowledge of the family increases this species will most likely require a new generic name.

Key to the species of *Neofedrizzia* gen. nov.

1. Male genital orifice between coxae III or between coxae III and IV. Length of idiosoma 910μ, width 660μ, ratio length to width = 1·38 : 1·0. Anal shield ca. 425μ wide by 190μ long, ratio width to length = 2·23 : 1·0. Anterior hyaline portion of dorsal shield small and crescentic. Female unknown.

N. laevis (Canest., 1884).

Where known males with genital orifice between coxae II or between coxae II and III. 2

2. Anterior hyaline portion of dorsal shield large, expanded laterally and posteriorly to about the level of anterior margin of anal shield, to form a distinct scute without pores or setae except the verticals. Sternogynial shield conical with lightly convex converging sides, wider anteriorly than long, 211μ by 160μ, ratio width to length = 1·32 : 1·0, the antero-lateral angles are acute as in *Fedrizzia*. Anal shield 784μ wide by 267μ long, ratio width to length = 2·93 : 1·0. Idiosoma 1276μ long by 963μ wide, ratio length to width = 1·32 : 1·0. Male unknown.

N. scutata sp. nov.

Anterior hyaline portion of dorsal shield small, crescent- or sickle-shaped, not extending backwards beyond level of anterior edge of camerostome. Antero-lateral angles of sternogynial shield not acute, evenly rounded. 3

3. Anterior margin of sternogynial shield equal to or longer than the shield. 4

Anterior margin of sternogynial shield shorter than the shield. 6

4. Sternogynial shield as wide across anterior margin as it is long, 146μ, with its sides and posterior evenly rounded. Sternal setae II, III and IV minute. Anal shield 696μ wide by 336μ long, ratio width to length = 2·07 : 1·0. Pre-sternal processes of male stout and short with truncate apex, and curved inwards; genital orifice with about 7 pores surrounding posterior half. Length of idiosoma 1392μ, width 1020μ, ratio length to width = 1·36 : 1·0.

N. vidua sp. nov.

Anterior margin of sternogynial shield distinctly longer than the shield. 5

5. Pre-sternal processes of male curved outwards and bluntly pointed apically; male genital orifice flanked posteriorly by about 8 pores on each side. Sternogynial shield of female 132μ wide on anterior margin by 126μ long, ratio width to length = 1·05 : 1·0. Anal shield 520μ wide by 250μ long, ratio width to length = 2·08 : 1·0. Length of idiosoma 1276μ, width 870μ, ratio length to width = 1·47 : 1·0.

N. brooksi sp. nov.

Pre-sternal processes of male short, bluntly rounded apically and curved inwards to one another; genital orifice of male without any pores flanking it on posterior half. Sternogynial shield evenly rounded laterally and posteriorly 124μ wide anteriorly and 99μ long, ratio of width to length = 1·25 : 1·0. Anal shield 406μ wide by 139μ long, ratio width to length = 2·92 : 1·0. Length of idiosoma 812μ, width 638μ, ratio length to width = 1·27 : 1·0.

N. canestrinii sp. nov.

6. Sternogynial shield with straight parallel sides and broad rounded posterior, the anterior margin is 80μ, and its length 109μ ratio width to length = 0·73 : 1·0. Anal shield 409μ wide by 145μ long, ratio of width to length = 2·42 : 1·0. Idiosoma 745μ long by 570μ wide, ratio of length to width = 1·3 : 1·0. Male unknown.

N. vitzthumi (Ouds., 1927).

Sternogynial shield not shaped as above. 7

7. Pre-sternal processes of male basally free, at least twice as long as wide, inwardly curved and bilobed apically. Sternogynial shield, 146μ long by 126μ wide on anterior margin, ratio width to length = 0·86 : 1·0, with sides lightly convex and converging to a narrow rounded posterior. Anal shield 520μ wide by 220μ long, ratio width to length = 2·36 : 1·0. Length of idiosoma 1210μ, width 850μ, ratio length to width = 1·42 : 1·0.

N. gayi sp. nov.

Pre-sternal processes of male not as above, short and stout, bluntly truncate apically, curved inwards. 8

8. A small species, length of idiosoma 893μ, width 638μ, ratio of length to width 1·4 : 1·0. Sternogynial shield 103μ wide on anterior margin by 118μ long, ratio of width to length = 0·87 : 1·0. Anal shield 352μ wide by 160μ long, ratio width to length = 2·2 : 1·0.

N. cynota sp. nov.

Large species, length of idiosoma 1000μ or more. 9

9. Large, somewhat elongate species, idiosoma 1369μ long, 905μ wide, ratio length to width 1·5 : 1·0. Sternal setae I and II very long and slender, III and IV long but shorter than I and II. Sternogynial shield with lightly convex converging sides and rounded apex, slightly longer than it is wide on anterior margin, 146μ by 141μ, ratio width to length = 0·96 : 1·0. Anal shield 615μ wide by 302μ long, ratio width to length = 2·04 : 1·0.

N. tragardhi sp. nov.

Smaller species, length of idiosoma 1000μ to 1200μ. 10

10. Sternum of female with setae II-IV fine and slender and moderately long. Sternogynial shield bowl-like with evenly rounded sides, 132μ wide anteriorly by 144μ long, ratio width to length = 0·92 : 1·0. Anal shield 510μ wide by 244μ long, ratio width to length = 2·09 : 1·0. Pre-sternal processes of male, short, stout, apically truncate, about as long as wide, and bending inwards to one another. Idiosoma 1160μ long, 770μ wide, ratio length to width = 1·5 : 1·0.

N. camini sp. nov.

Sternal setae shorter and not so fine. Sternogynial shield longer in proportion to width, anterior margin 108μ, length 131μ, ratio length to width = 0·82 : 1·0, with lightly convex sides. Anal shield 404μ wide by 202μ long, ratio width to length 2·0 : 1·0. Pre-sternal processes of male somewhat longer than wide, stout, apically truncate and only very slightly converging to one another. Idiosoma 1020μ long, 696μ wide, ratio width to length 1·46 : 1·0.

N. gorirossiae sp. nov.

Genus Parafedrizzia nov.

Separate jugular shield (tetartosternum) present in both sexes, consequently the male without the pre-sternal processes of *Neofedrizzia*. Sternogynial shield

of female widest across the anterior margin with outwardly directed antero-lateral corners as in *Fedrizzia*, sides not evenly rounded, bell-jar shaped with apical knob. One of the two long setae on basal segment of palpi in both sexes with 6-8 long branches, the other nude. Femur of legs II-IV short and broad with lamellae as in *Neofedrizzia* but without the strong curved spine at the posterior corner. Anal shield coalesced with ventral shield in both sexes.

Type *Parafedrizzia bulolocnsis* sp. nov.

Parafedrizzia bulolocnsis sp. nov.

Text fig. 16 A-K

Types—Holotype female, allotype male and six paratypes of each sex from a Passalid in a rotten log at Bulolo, New Guinea, 3rd Sept., 1954 (coll. H.W.).

Description—Female holotype—A strongly chitinised dark brownish species, of ovoid shape but widest posterior of the middle in line with coxae IV. Length of idiosoma 970μ, width 680μ, ratio length to width = 1·42 : 1·0.

Dorsum—Shield entire and covering the whole of the dorsal surface, anteriorly of coxae IV underlapping the venter and coalesced with ventral and exopodal shields, and anteriorly forming a camerostome, posteriorly of coxae IV it underlaps as a rather broad strip separated from the ventri-anal shield by a distinct strip of cuticle; dorsally the shield is furnished with numerous circular pores, a number of lyriform pores and many minute setae, on the anterior margin is a pair of vertical setae, 117μ long, ciliated and 117μ apart, on each side of these are two short setae and a similar pair in between, on the disc is an oval area with fewer setae outlined by a line of inwardly curved crescent-like markings as figured.

Venter—Tritosternum with base not much longer than broad as figured, with paired ciliated laciniae; jugular shield (tetartosternum) as figured, crown-shaped, 117μ wide by 47μ long (deep) with one pair of slender setae anteriorly, 56μ apart and about 50μ long, with a pair of lyriform pores 42μ apart; sternal shield as figured, anterior margin straight 89μ wide, sides contouring coxae II with shield narrowest in mid-line of coxae II to 80μ, then expanding between coxae II and III to a width of 282μ for the postero-lateral arms, posterior margin straight medially for a width of 188μ then curving posteriorly for 30μ on each side before running obliquely forwards to tip of postero-lateral arms, with three pairs of setae and one pair of lyriform pores, sternal setae II 47μ long and 47μ apart in the antero-lateral angles, III and IV shorter 28μ long in a transverse row near posterior margin, with the medians 42μ apart and 28μ from the laterals, pores 33μ behind setae II and 52μ apart, length of shield 94μ; sternogynial shield bell-jar shaped, anterior margin 179μ, length 132μ, ratio width to length = 1·35 : 1·0, sides sinuous and converging to apex as figured, with one pair of lyriform pores 10μ behind anterior margin and 80μ apart; latigynial shields strap-like contouring sides of sternogynial and partly hidden under inner edges of ventral shield; mesogynial shield reduced and partly obscured; ventral shield large, coalesced with the endopodal, exopodal and anal shields and occupying most of the venter with many small pores and small but obvious setae; the strip of under-lapping dorsal shield contouring the margins of the ventri-anal shield carries a row of about 5 fine setae on each side about 24μ long, the anus is situated in the posterior angle of the ventri-anal shield with the paranal setae very minute; the peritreme is thin and reaches to coxae I, with the stigma situated between coxae III and IV.

Gnathosoma—As in the other genera of the family; labial cornicles swollen with a small adpressed claw-like appendage; mandibles and chelicerae as figured.

Legs—As in species of *Neofedrizzia*, but the femora of legs II-IV without any strong curved spine at the posterior basal angle, I long 464μ and antennaeform, angulate, II-IV stouter with claws and caruncle, II 440μ, III 440μ, IV 464μ.

Male allotype—Of the same general facies as in the female. Length of idiosoma 986μ, width 696μ.

Dorsum—As in the female.

Venter—Tritosternum similar to that of female; jugular shield crown-shaped, 113μ wide by 47μ long (deep) with an anterior pair of slender recurved setae,

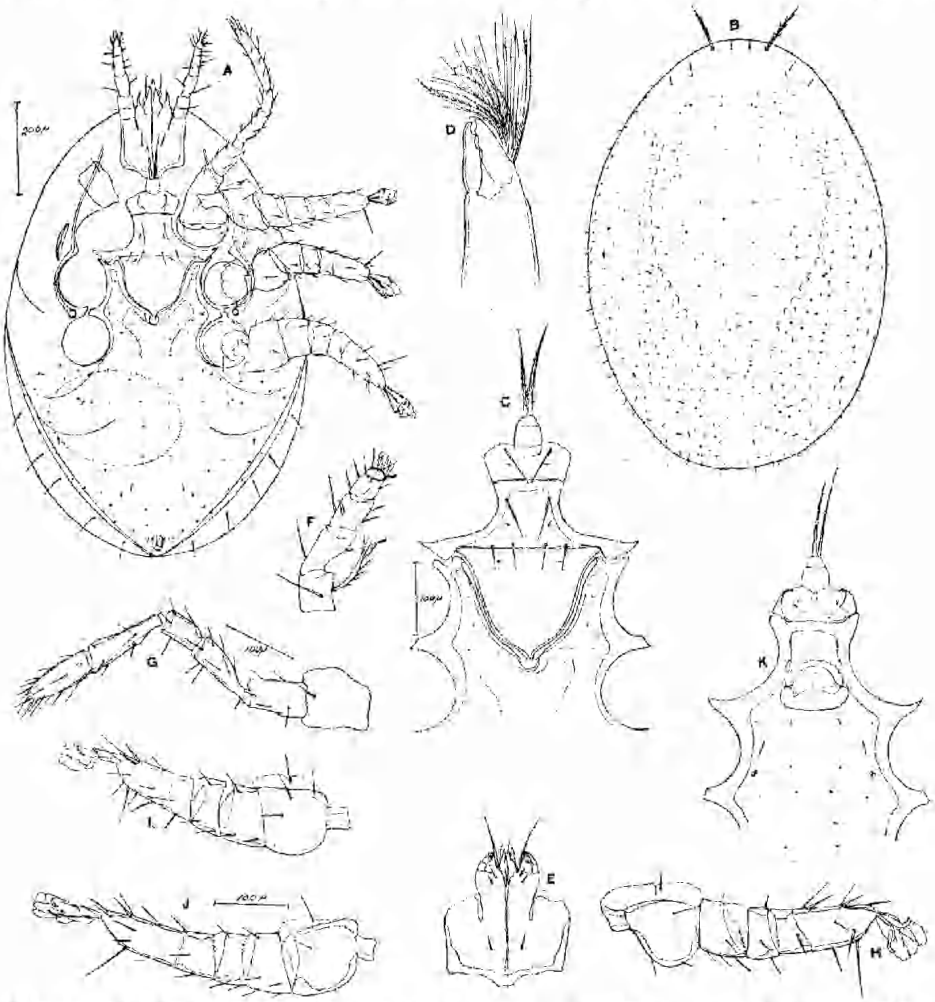

Fig. 16.—*Parafedrizzia buloloensis* g. et sp. nov. A-J, Female: A, ventral view; B, dorsum; C, tritosternum, jugular, sternal, sternogynial and latigynial shields enlarged; D, chelicerae; E, gnathosoma; F, palp; G, leg I; H, leg II; I, leg III; J, leg IV; K, Male tritosternum, jugular and sternal shields.

rather wide apart 60μ, and ca. 50μ long, with one pair of lyriform pores 44μ apart; sternal, ventral and anal shields coalesced together with endopodal and exopodal and the underlap of the dorsal shield as far back as posterior of coxae, and then separated from the under-lapping dorsal shield by a narrow strip of cuticle; with the genital orifice situated between coxae II and wider than long

94μ by 66μ, without any pores around the posterior half; with setae and pores as in Fig. 16 K; anterior width 108μ, narrowest to 85μ between coxae II and widest between tip of lateral arms between coxae II and III to 282μ.

Gnathosoma—As in female.

Legs—As in female, I 464μ long, antennaeform, II 406μ, III 406μ, IV 464μ.

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N.B. Since this paper has been in press the following record has been noted.

"*Fedrizzia gloriosa* n. sp. Dark brown, quite oval, size about twice that of the other two (*known*) species. Margin of body with equidistant minute setae. Mandibles in both sexes with small chelae, larger chela with penicillate process. All femora except first with wide marginal scale.

"Length 1250μ, width 800μ.

"Habitat on coleopteron of the family Passalidae. Australia, 'N.S.W.'. Coll. Cl. Froggatt."

The above is a free translation of the brief description published by Berlese. "Brevi diagnosi di generi et specie nuovi di Acari", Redia 6 (2): 376, 1910.

In view of our present knowledge of this family, such a brief description is specifically unrecognisable, pending a re-examination of Berlese's types which are probably in the Berlese collection in Florence.

All that can be said at this stage is that on the description of the femora of the legs it is probably a species of *Neofedrizzia*. It may be one of the larger species of this genus described in the present study.